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# THE

# NAUTICAL ALMANAC

AND

# ASTRONOMICAL EPHEMERIS,

## FOR THE YEAR 1778.

Publiſhed by ORDER of the

## COMMISSIONERS OF LONGITUDE.

LONDON:

PRINTED BY WILLIAM RICHARDSON,
PRINTER;

AND SOLD BY

J. NOURSE, in the Strand, and Meſſ. MOUNT and PAGE
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M DCC LXXVI.

[Price Three Shillings and Six Pence.]

# EXTRACT from the Act of Parliament concerning the Longitude, made in the Fifth Year of the Reign of his preſent Majeſty.

WHEREAS the Publication of Nautical Almanacs conſtructed by proper Perſons, under the Direction of the ſaid Commiſſioners, would greatly contribute to make the ſaid Lunar Tables more generally uſeful; Be it further Enacted, by the Authority aforeſaid, That it ſhall and may be lawful to and for the ſaid Commiſſioners to cauſe ſuch Nautical Almanacs, or other uſeful Tables, to be conſtructed, and to print, publiſh, and vend, or cauſe to be printed, publiſhed, and vended, any Nautical Almanac or Almanacs, or other uſeful Table or Tables, which they, or the major Part of them, ſhall, from time to time, judge neceſſary and uſeful, in order to facilitate the Method of diſcovering the Longitude at Sea; any Law, Statute, excluſive Privilege, private Charter, or other Cuſtom, to the contrary thereof notwithſtanding.

And be it Enacted, by the Authority aforeſaid, That no Perſon or Perſons ſhall print, publiſh, or vend, or cauſe to be printed, publiſhed, or vended, any Nautical Almanac or Almanacs, or other Table or Tables conſtructed under the Direction of the ſaid Commiſſioners, without being firſt licenſed by the ſaid Commiſſioners, or the major Part of them: And if any Perſon or Perſons not ſo licenſed, or not being authorized by the Perſon or Perſons ſo licenſed by the ſaid Commiſſioners, ſhall print, publiſh, or vend, or cauſe to be printed, publiſhed, or vended, any ſuch Nautical Almanac or Almanacs, or other Table or Tables, every ſuch Perſon or Perſons ſhall, for every Copy of ſuch Nautical Almanac or Table ſo printed, publiſhed, or vended, forfeit and pay the Sum of Twenty Pounds; to be recovered by Action of Debt, Bill, Plaint, or Information, in any of his Majeſty's Courts of Record at *Weſtminſter*; and that One Moiety of ſuch Penalty and Forfeiture ſhall be to his Majeſty, his Heirs and Succeſſors, and the other Moiety to him or them that ſhall proſecute, inform, or ſue for the ſame.

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except ſo much thereof as relates to the Appointment and Authority of the Commiſſioners thereby conſtituted, and alſo ſuch Clauſes as relate to the conſtructing, printing, publiſhing, vending, and licenſing of Nautical Almanacs and other uſeful Tables; and for the more effectual Encouragement and Reward of ſuch Perſon and Perſons as ſhall diſcover a Method for finding the ſame, or ſhall make uſeful Diſcoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year o the Reign of his preſent Majeſty.

BE it Enacted by the KING's Moſt Excellent Majeſty, by and with the Advice and Conſent of the Lords Spiritual and Temporal, and Commons, in this preſent Parliament aſſembled, and by the Authority of the ſame, That each and every of the ſaid recited Acts (ſave and except ſuch Clauſe and Clauſes in each or any of them as relate to the Appointment or Authority of all or any of the Commiſſioners thereby reſpectively conſtituted, and alſo ſuch Clauſe and Clauſes as relate to the conſtructing, printing, publiſhing, vending, and licenſing of Nautical Almanacs, and other uſeful Tables) ſhall, from and after the Twenty-fourth Day of *June* One thouſand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and ſufficient Encouragement to any Perſon or Perſons who ſhall diſcover any Method or Methods for finding the ſaid Longitude, Be it Enacted by the Authority aforeſaid, That the Firſt Author or Authors, Diſcoverer or Diſcoverers, of each and every ſuch Method or Methods, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to ſay, In caſe the Method propoſed ſhall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five thouſand Pounds,

Pounds, if ſuch Method determines the ſaid Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thouſand Five hundred Pounds, if it determines the ſame to Two Thirds of that Diſtance; and to the Reward or Sum of Ten thouſand Pounds, if it determines the ſame to One Half of the ſaid Diſtance: Which reſpective Rewards ſhall be due and paid when ſuch Method ſhall have been ſufficiently tried by the following Experiments and Voyages to be made and performed by ſuch Perſons, and under ſuch Reſtrictions, as the ſaid Commiſſioners for the Diſcovery of Longitude at Sea reſpectively conſtituted by the above-recited Acts, or the major Part of them, ſhall think fit to appoint and direct; (that is to ſay), When and ſo ſoon as Two or more Time-keepers of the ſame Conſtruction ſhall have been tried at the ſame Time, for the Space of Twelve Months, at the Royal Obſervatory at *Greenwich*, then in Two Voyages round the Iſland of *Great Britain*, in contrary Directions, and in ſuch other Voyages to different Climates as the ſaid Commiſſioners ſhall think fit to direct and appoint; and after their Return from ſuch Voyages, or any of them, for ſuch longer Time, at the ſaid Obſervatory, not exceeding Twelve Months, as the ſaid Commiſſioners ſhall judge neceſſary; and alſo when and ſo ſoon as the ſaid Commiſſioners, or Two Thirds of them at the leaſt, ſhall, after ſuch Experiments and Voyages have been made and performed as aforeſaid, have declared and determined that ſuch Method is generally practicable and uſeful, and ſufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforeſaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and alſo when and ſo ſoon as the Principles and Practice of ſuch Method are fully diſcovered and explained to the Satisfaction of the ſaid Commiſſioners, or Two Thirds of them at leaſt; and ſuch Author or Authors, Diſcoverer or Diſcoverers, ſhall have delivered up and aſſigned over to the ſaid Commiſſioners, for the Uſe of the Public, the abſolute Property of ſuch Time-keepers as ſhall have been tried

tried by ſuch Experiments and Voyages as aforeſaid, together with all Plates, Deſcriptions, Theories, and Explanations belonging or relating to the ſame, and which ſhall contain the Whole of ſuch Diſcovery of the Longitude; and in caſe the Method propoſed ſhall be by means of improved Solar and Lunar Tables, then and in ſuch Caſe the Author or Authors of ſuch improved Solar and Lunar Tables, their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Reward or Sum of Five thouſand Pounds, if ſuch Solar and Lunar Tables ſhall prove ſufficiently exact to ſhew the Diſtance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, anſwering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Obſervation; and when it ſhall appear to the Satisfaction of the ſaid Commiſſioners, or Two Thirds of them at leaſt, that ſuch Tables are conſtructed intirely upon the Principles of Gravitation laid down by Sir *Iſaac Newton* (except with reſpect to thoſe Elements which muſt neceſſarily be taken from aſtronomical Obſervations), and alſo when the Truth of ſuch Tables ſhall have been further confirmed and proved by Compariſon with a Series of aſtronomical Obſervations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward ſhall be due and paid, when the ſaid Commiſſioners, or Two Thirds of them, at leaſt, ſhall have declared and determined, that ſuch Tables are ſufficiently exact to ſhew the Diſtance of the Moon from the Sun and Stars in the Heavens, within the Limits above-mentioned; and alſo when the Author or Authors of ſuch improved Solar and Lunar Tables, his or their Executors, Adminiſtrators, or Aſſigns, ſhall have delivered up and aſſigned over to the ſaid Commiſſioners, for the Uſe of the Public, the abſolute Right and Property to and in the ſame, together with the Theory relating thereunto; and in caſe any other Method ſhall be propoſed for finding the Longitude at Sea beſides thoſe before-mentioned, that then and in ſuch Caſe the Firſt Author or Authors, Diſcoverer or Diſcoverers, of

any

any ſuch Method, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled to and have the Reward or Sum of Five thouſand Pounds, if it ſhall determine the ſaid Longitude within One Degree of a great Circle or Sixty geographical Miles; to the Reward or Sum of Seven thouſand Five hundred Pounds, if it ſhall determine the ſame to Two Thirds of that Diſtance; and to the Reward or Sum of Ten thouſand Pounds, if it ſhall determine the ſame to One Half of the ſame Diſtance; which reſpective Rewards ſhall be due and paid, ſo ſoon as the ſaid Commiſſioners, or Two Thirds of them, at leaſt, ſhall, after proper Trial have been made by their Appointment and Direction, have determined that ſuch Method ſhall be generally practicable and uſeful for finding the Longitude at Sea within the reſpective Limits above mentioned.

And be it further Enacted, by the Authority aforeſaid, That when and ſo ſoon as any ſuch Method or Methods, for the Diſcovery of the ſaid Longitude, ſhall be tried, as before-mentioned, and found practicable and uſeful at Sea, and ſufficiently exact to determine the Longitude within any of the Degrees or Limits aforeſaid, the ſaid Commiſſioners, or Two Thirds of them, ſhall certify the ſame, under their Hands and Seals, to the Commiſſioners of the Navy for the Time being, together with the Name or Names of the Perſon or Perſons who ſhall be the Author or Authors of ſuch Method or Methods; and upon the Receipt of ſuch Certificate, the ſaid Commiſſioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treaſurer of the Navy for the reſpective Sum or Sums of Money to which the Author or Authors of ſuch Propoſal, his or their Executors, Adminiſtrators, or Aſſigns, ſhall be intitled by virtue of this Act; which Sum or Sums the ſaid Treaſurer is hereby required to pay to the ſaid Author or Authors, their Executors, Adminiſtrators, or Aſſigns accordingly, out of any Money that may be in his Hands unapplied to the Uſe of the Navy, according to the true Intent and Meaning of this Act.

And

And be it further Enacted by the Authority aforeſaid, That the ſaid Commiſſioners for the Diſcovery of Longitude at Sea, or any Five or more of them, ſhall have full Power and Authority to hear and receive any Propoſal or Propoſals that ſhall be made to them for diſcovering the ſaid Longitude, or for making any other uſeful Improvement in Navigation; and in caſe the ſaid Commiſſioners, or any Five or more of them, ſhall be ſo far ſatisfied of the Probability of any ſuch Diſcovery or Improvement as to think it proper to cauſe Experiments to be made thereof, they ſhall certify the ſame, together with the Names of the Author or Authors of ſuch Propoſal or Propoſals, under their Hands and Seals, to the Commiſſioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treaſurer of the Navy for any Sum or Sums of Money as the ſaid Commiſſioners for the Diſcovery of Longitude at Sea, or any Five or more of them, ſhall think neceſſary for making ſuch Experiments; which Sum or Sums the Treaſurer of the Navy is hereby required to pay immediately to ſuch Perſon or Perſons as ſhall be appointed by the ſaid Commiſſioners to make thoſe Experiements out of any Money which ſhall be in his the ſaid Treaſurer's Hands unapplied as aforeſaid.

And be it further Enacted, by the Authority aforeſaid, That if any Perſon or Perſons ſhall make any Diſcovery for finding the Longitude at Sea, which, though not of ſo great Uſe as to be intitled to any of the great Rewards above ſpecified, ſhall nevertheleſs be adjudged by the ſaid Commiſſioners for the Diſcovery of Longitude at Sea, or the major Part of them, to be of conſiderable Uſe to the Public, or ſhall make any other Diſcovery or Diſcoveries, Improvement or Improvements, uſeful to Navigation; then, and in ſuch Caſe, ſuch Perſon or Perſons, his or their Executors, Adminiſtrators, or Aſſigns, ſhall, from time to time, have and receive ſuch leſs Reward or Sum or Sums of Money as the ſaid Commiſſioners, or the major Part of them, ſhall think reaſonable; and certify accordingly, under their Hands and Seals, to the Commiſſioners of the Navy,

Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treaſurer of the Navy for any ſuch Sum or Sums of Money, which the ſaid Treaſurer is hereby authorized and required to pay immediately to ſuch Perſon or Perſons, his or their Executors, Adminiſtrators, or Aſſigns, out of any Money that ſhall be in his the ſaid Treaſurer's Hands unapplied as aforeſaid.

Provided alſo, and it is hereby further Enacted, That in caſe any Perſon or Perſons who ſhall and may have received any Sum or Sums of Money, by virtue of this Act, as a Reward for any Method of diſcovering the Longitude at Sea, ſhall afterwards become intitled to any of the greater Rewards appointed by this Act, for or on account of the ſame Method; that then, and in ſuch Caſe, ſuch Sum or Sums of Money as they ſhall or may have received as aforeſaid ſhall be conſidered as Part of ſuch greater Reward, and deducted therefrom accordingly; and that no Perſon ſhall receive more in the Whole for any One Method for diſcovering the Longitude at Sea than the greateſt Reward appointed for ſuch Method by this Act.

By

By the COMMISSIONERS appointed by Acts of Parliament for the Diſcovery of the Longitude at Sea, *&c.* and for examining, trying, and judging of all Propoſals, Experiments, and Improvements relating to the ſame.

WHEREAS we have employed proper Perſons to compute Nautical Almanacs and Aſtronomical Ephemerides for the Years 1777 and 1778, which will greatly contribute to make the Lunar Tables conſtructed by the late Profeſſor MAYER of *Gottingen* (which you have already printed with our Authority) more generally uſeful; and whereas we think fit to employ you to print the ſaid Nautical Almanacs and Aſtronomical Ephemerides: We do therefore, in purſuance of the Power veſted in us by Act of Parliament, hereby licenſe, authorize, and impower you to cauſe the ſame to be printed, together with ſuch other uſeful Tables for facilitating the Method of diſcovering the Longitude at Sea, as ſhall have been conſtructed under our Direction, and will be delivered to you by the Reverend Mr. NEVIL MASKELYNE, his Majeſty's Aſtronomer Royal at *Greenwich*; and for ſo doing this ſhall be your ſufficient Warrant. Given under our Hands and Seals the 28th Day of *October* 1775.

SANDWICH (L.S.)
FL. NORTON (L.S.)
GILB. ELLIOT (L.S.)
C. KNOWLES (L.S.)
C. HARDY (L.S.)
J. PRINGLE (L.S.)
N. MASKELYNE (L.S.)
T. HORNSBY (L.S.)
J. SMITH (L.S.)
E. WARING (L.S.)
A. SHEPHERD (L.S.)
G. HAY (L.S.)
P. STEPHENS (L.S.)
J. SMITH (L.S.)

To Mr. WILLIAM RICHARDSON, Printer in *Saliſbury-court, Fleet-ſtreet.*

By Order of the Commiſſioners,

JOHN IBBETSON, Secretary.

By the COMMISSIONERS appointed by Acts of Parliament for the Diſcovery of the Longitude at Sea, *&c.* and for examining, trying, and judging of all Propoſals, Experiments, and Improvements relating to the ſame.

WHEREAS we think fit to employ you to publiſh and vend, and to cauſe to be publiſhed and vended, the Nautical Almanacs and Aſtronomical Ephemerides for the Years 1777 and 1778, together with other uſeful Tables (conſtructed under our Direction) for facilitating the Method of diſcovering the Longitude at Sea, which will be printed by Mr. WILLIAM RICHARDSON of *Saliſbury-court, Fleet-ſtreet*: We do therefore, in purſuance of the Power veſted in us by Act of Parliament, hereby licenſe, authorize, and impower you to publiſh and vend, and to cauſe to be publiſhed and vended, the ſaid Nautical Almanacs and Aſtronomical Ephemerides, together with the other uſeful Tables above-mentioned. For which this ſhall be your ſufficient Warrant. Given under our Hands and Seals the 28th Day of *October* 1775.

SANDWICH (L.S.)
FL. NORTON (L.S.)
GILB. ELLIOT (L.S.)
C. KNOWLES (L.S.)
C. HARDY (L.S.)
J. PRINGLE (L.S.)
N. MASKELYNE (L.S.)
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J. SMITH (L.S.)
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G. HAY (L.S.)
PH. STEPHENS (L.S.)
J. SMITH (L.S.)

To Mr. JOHN NOURSE, Bookſeller in the *Strand*.

By Order of the Commiſſioners,

JOHN IBBETSON, Secretary.

☞ A Licence was alſo granted to the like Effect to Meſſ. JOHN MOUNT and THOMAS PAGE, Stationers on *Tower-hill*.

PRE-

# PREFACE.

THE Commiſſioners of Longitude, in purſuance of the Powers veſted in them by Act of Parliament, preſent the Publick with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1778, being the Twelfth Impreſſion, to be continued annually; a Work which muſt greatly contribute to the Improvement of Aſtronomy, Geography, and Navigation. This EPHEMERIS contains every Thing eſſential to general Uſe that is to be found in any Ephemeris hitherto publiſhed, with many other uſeful and intereſting Particulars never yet offered to the Publick in any Work of this Kind. The Tables of the Moon had been brought by the late Profeſſor MAYER of Gottingen to a ſufficient Exactneſs to determine the Longitude at Sea, within a Degree, as appeared by the Trials of ſeveral Perſons who made Uſe of them. The Difficulty and Length of the neceſſary Calculations ſeemed the only Obſtacles to hinder them from becoming of general Uſe: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Neceſſity of calculating the Moon's Place from the Tables, and afterwards computing the Diſtance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus; ſo that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Diſtance on account of Refraction and Parallax, which is alſo rendered very eaſy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and publiſhed among the Tables requiſite to be uſed with the EPHEMERIS; or by either

either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly publiſhed in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the Firſt by myſelf, and the Second by Mr. GEORGE WITCHELL; but ſtill more ſo by the GENERAL TABLES for correcting the apparent Diſtance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commiſſioners of Longitude, and publiſhed under the Care of Dr. SHEPHERD, Plumian Profeſſor of Aſtronomy and experimental Philoſophy at CAMBRIDGE, in 1772.

By Deſire of the Commiſſioners of Longitude, I drew up the Explanation and Uſe of the Articles contained in the EPHEMERIS, and the Inſtructions, with Examples, for finding the Longitude at Sea by the Help of the ſame. I alſo collected and calculated the Sixteen Firſt Pages of Tables requiſite to be uſed with the EPHEMERIS, and computed the Table of proportional Logarithms, which ſeemed to me abſolutely neceſſary to clear this Method of any remaining Difficulty; and added Explanations of all the Tables, and a Correction, p. 49 and 50, which may be applied by the Curious to the Effect of Refraction on the Moon's Diſtance from a Star, found by Mr. LYONS, or any other Method, on account of the Barometer and Thermometer.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER'S laſt manuſcript Tables, received by the Board of Longitude after his Deceaſe, which have been printed under my Inſpection, and publiſhed in 1770; but the Calculations of the Moon were made in this EPHEMERIS, for the ſecond time, from new

new Tables, improved from MAYER's Tables, compoſed by Mr. CHARLES MASON, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of lunar Obſervations made by the late Dr. BRADLEY, and publiſhed in the Nautical Almanac of 1774. In theſe new Tables, the Epoch of the Moon's mean Longitude is 1″ leſs, that of the Apogee is 56″ leſs, and that of the Aſcending Node 45″ more, than in MAYER's printed Tables, and the Equations are calculated to Tenths of a Second. Moreover, One new Equation is introduced, whoſe Argument is the mean Diſtance of the Moon from the Sun's Apogee, and Maximum 16″,4. Theſe new Tables, when compared with the above-mentioned Series of Obſervations, a proper Allowance being made for the unavoidable Error of Obſervation, ſeem to give always the Moon's Longitude in the Heavens correctly within 45 Seconds of a Degree; which greateſt Error, added to a poſſible Error of One Minute in taking the Moon's Diſtance from the Sun or a Star at Sea, will at a Medium only produce an Error of 50 Minutes of Longitude.

The Calculations of the Planets were made from Dr. HALLEY's Tables; and the Eclipſes of Jupiter's Firſt and Second Satellites from the Tables of Mr. WARGENTIN, publiſhed by M. DE LA LANDE in 1759; and thoſe of the Third and Fourth Satellites from Tables of the ſame farther improved by Mr. WARGENTIN, and annexed, the firſt to the NAUTICAL ALMANAC of 1771, and the other to the CONNOISSANCE DES MOUVEMENTS CELESTES of 1766.

All the Articles of the EPHEMERIS were computed by Two ſeparate Perſons, and examined by a Third,

a Third, except the Moon's Longitude, Latitude, Right Aſcenſion, Declination, Semidiameter, and Parallax, which, for Noon, were computed by One Perſon, and for Midnight by another, and the Truth of theſe Calculations aſcertained by means of Differences; which, for the Moon's Longitude, were carried as far as the Fourth Order.

To this EPHEMERIS are annexed, The Right Aſcenſions and Zenith Diſtances of the Moon, deduced from Dr. *Bradley*'s Obſervations, made between *September* 13th, 1750, and *November* 2d, 1760; from which the Series of the Moon's Longitudes and Latitudes annexed to the NAUTICAL ALMANAC of 1774 were inferred; and Five Aſtronomical Problems by Mr. *Lyons*.

The Zenith Diſtances of the Moon, taken from Dr. BRADLEY'S OBSERVATIONS, are ſet down exactly as they were obſerved, and are to be corrected for the Error of the Line of Collimation at different Times, as follows; in JAN. 1750, 6″; in SEPT. 1750, 4″; in JAN. 1751, 3″; in SEPT. 1751, 3″; in AUG. 1752, 2″½; are to be ſubſtracted from the Zenith Diſtances. And beſides this, the whole Arch of the old Quadrant having been found to exceed 90° by 16″, the proportional Part of 16″ correſponding to the Zenith Diſtance is alſo to be ſubſtracted. From JULY 8th, 1753, the new Braſs Quadrant was made Uſe of; the Line of Collimation and Arch of which were without ſenſible Error.

NEVIL MASKELYNE,
ASTRONOMER ROYAL.

GREENWICH,
JUNE 27th,
1776.

EXPLA-

## EXPLANATION of the Characters uſed in the EPHEMERIS.

### The PLANETS, &c.

☉ The Sun.
☾ The Moon.
☿ Mercury.
♀ Venus.
♂ Mars.
♃ Jupiter.
♄ Saturn.
☊ The Moon's, or any other Planet's Aſcending Node.
☋ The Deſcending Node.
☌ Conjunction, or Planets ſituated in the ſame Longitude.
☍ Oppoſition, or Planets ſituated in oppoſite Longitudes, or differing 6 Signs from each other.

### Signs of the Zodiac.

| S. | | S. | |
|---|---|---|---|
| 0. | ♈ Aries. | 6. | ♎ Libra. |
| 1. | ♉ Taurus. | 7. | ♏ Scorpio. |
| 2. | ♊ Gemini. | 8. | ♐ Sagittarius. |
| 3. | ♋ Cancer. | 9. | ♑ Capricornus. |
| 4. | ♌ Leo. | 10. | ♒ Aquarius. |
| 5. | ♍ Virgo. | 11. | ♓ Piſces. |

## ECLIPSES for the YEAR 1778.

June 24. ☉ eclipſed, viſible: H.M.
Beginning of the Eclipſe — — 3. 41
Greateſt Obſcuration — — — 4. 35
Viſible ♂ — — — — — 4. 36
End of the Eclipſe — — — 5. 27
Digits eclipſed 6d. 10′ on the Sun's Southern Limb.
The Firſt Impreſſion of ☽ on ☉'s Circumference will be at 19°½ from ☉'s Nadir on the Right Hand.

Dec. 3. ☽ eclipſed, inviſible: H.M.
Beginning of the Eclipſe — — 16. 24
Middle — — — — 17. 37
End — — — — 18. 49
Digits eclipſed 6d. 14′ on the ☽'s northern Limb.

# ECLIPSES for the YEAR 1778.

Dec. 18. ☉ eclipſed, inviſible:
☌ ☉ and ☽ at 10ʰ. 4′. in 8ˢ. 27°. 12′. ☽'s Lat. 36′. 51″ S.
☉ centrally eclipſed on the Meridian at 10ʰ. 5′½. in Long. 151°. 23′W. and Lat. 66°. 38′S.

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8 1777. 8

| | Obliquity of the Ecliptic. D. M. S. | Equat. of Equin. Points. S. |
|---|---|---|
| Jan. 1. | 23. 28. 3,8 | 17,8 |
| Apr. 1. | 23. 28. 4,4 | 18,0 |
| July 1. | 23. 28. 5,2 | 18,0 |
| Oct. 1. | 23. 28. 5,8 | 17,9 |
| Dec. 31. | 23. 28. 6,5 | 17,7 |

☞ The Obliquity of the Ecliptic here ſet down is computed from the mean Obliquity 23°. 28′. 9″,7, ſettled to the Beginning of the Year 1769 from Obſervations made at the Royal Obſervatory at *Greenwich*, and allowing it to decreaſe at the Rate of half a Second a Year.

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Errata in the EPHEMERIS for 1776.

Page 61, col. 2, oppoſite 26th day, put "Trin. Term ends."
—138, col. 3, or ☽'s Age, add at the beginning the numbers 22, 23, 24, 25, 26, 27, 28, 29, 30.

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Errata in the EPHEMERIS for 1777.

In the ☉'s Eclipſe, Jan. 9. ☽'s Lat. 0°. 40′½ S. for S. read N.
Page 25, col. 3, dele *Good Friday* on the 21ſt day, and inſert it at the 28th day.
— 29, March 5. ☽'s Long. at Noon, for 9ˢ. 19°. 59′. 59″, read 9ˢ. 19°. 58′. 59″.
— 29, March 17. ☽'s Lat. at Noon, dele N.
— 29, March 28. ☽'s Long. at Midnight, for 8ˢ. 1°. 55′. 59″, read 8ˢ. 1°. 54′. 59″.
— 32, March 19. ☽'s Diſtance from Regulus at Noon, for 18°. 55′. 53″, read 18°. 55′. 30″.
— 32, Apr. 1. ☽'s Diſt. from β Capricorni at Noon, for 60°. 6′. 16″, read 16°. 6′. 16″.
— 51, May 16. Emerſion of 1ſt Satellite, for 11ʰ. 44′. 42″, read 11ʰ. 42′. 42″.
— 58, May 29. ☽'s Diſt. from β Capricorni at 6ʰ, for 34°. 62′. 16″, read 34°. 42′. 16″.

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Erratum in the EPHEMERIS for 1778.

Page 17, Feb. 23. ☽'s Long. at Noon, for 9ˢ. 11°. 53′. 25″, read 9ˢ. 19°. 53′. 25″.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | Th. | *Circumcision.* |
| 2 | F. | |
| 3 | Sa. | |
| 4 | *Su.* | *2d Sunday after Christmas.* |
| 5 | M. | |
| 6 | Tu. | *Epiphany.* |
| 7 | W. | |
| 8 | Th. | Lucian. |
| 9 | F. | |
| 10 | Sa. | |
| 11 | *Su.* | *1st Sunday after Epiph.* |
| 12 | M. | |
| 13 | Tu. | Hilary. Cam. Ter. begins. |
| 14 | W. | Oxford Term begins. |
| 15 | Th. | |
| 16 | F. | |
| 17 | Sa. | |
| 18 | *Su.* | *2d Su. aft. Epiph. ♀ Char.* |
| 19 | M. | [*birth-day kept* |
| 20 | Tu. | Fabian. In 8 days of St. |
| 21 | W. | Agnes. [Hil. 1 ret. |
| 22 | Th. | Vincent. |
| 23 | F. | Hilary Term begins. |
| 24 | Sa. | |
| 25 | *Su.* | *3d Sunday after Epiphany* |
| 26 | M. | [*Conversion of St. Paul* |
| 27 | Tu. | *Pr. Aug. Fred. born.* From |
| 28 | W. | [St. Hil. in 15 days, 2 ret. |
| 29 | Th. | |
| 30 | F. | *King Charles* I. *martyr.* |
| 31 | Sa. | |

## Phases of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter— | 5. | 20. | 33 |
| Full Moon —— | 12. | 13. | 33 |
| Last Quarter —— | 20. | 1. | 19 |
| New Moon —— | 28. | 2. | 46 |

## Other Phenomena.

1. ☾ ♈ ♆ $14^h.\ 3'.$
   ☾ ☌ ♆ $17^h.\ 17'.$
3. ☾ 1 ad ♄ ♒ $10^h.\ 40'.$
   ☾ 2 ad ♄ ♒ $11^h.\ 27'.$
   ☾ 3 ad ♄ ♒ $11^h.\ 35'.$
4. ☾ 33 ♓ $9^h.\ 7'.$
7. ☾ 2 ad ξ Ceti $3^h.\ 17'.$
   ☾ μ Ceti $10^h.\ 46'.$
9. ☾ 1 ad ☌ ♉ $4^h.\ 7'.$
   ☾ 2 ad ☌ ♉ $4^h.\ 32'.$
   ☾ ♀ ♉ $6^h.\ 44'.$
10. ☾ ζ ♉ Im. $8^h.\ 58'.$ * $7'\frac{1}{2}$ S. of ☽'s center Em. $9^h.\ 57'.$ * $11'\frac{1}{4}$ S.
    ☾ ♊ ♊ $23^h.\ 48'.$
11. ☾ μ ♊ $2^h.\ 52'.$
12. ☾ ☌ ♊ $0^h.\ 46'.$
13. ☾ ♈ ♋ $8^h.\ 49'.$
16. ☾ ι ♌ $7^h.\ 45'.$
17. ☾ c ♍ $13^h.\ 30'.$
19. ☉ enters ♒ at $8^h.\ 46'.$
21. ☾ ♈ ♎ $20^h.\ 29'.$
22. ☾ ♊ ♎ $1^h.\ 2'.$
    ☾ θ ♎ $6^h.\ 5'.$
23. ☿ Stationary.
24. ☾ ϱ Serpentar. $0^h.\ 28'.$
26. ♂ λ ♒ diff. Lat. $32'.$
30. ☾ 1 ad ♄ ♒ $16^h.\ 27'.$
    ☾ 2 ad ♄ ♒ $17^h.\ 13'.$
    ☾ 3 ad ♄ ♒ $17^h.\ 21'.$
31. ☾ 33 ♓ $14^h.\ 35'.$

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | Th. | 9. 11. 17. 28 | 18.49. 7,3 | 22. 59. 15 | 4. 15,3 | 28,1 |
| 2 | F. | 9. 12. 18. 40 | 18.53.31,9 | 22. 53. 50 | 4. 43,4 | 27,7 |
| 3 | Sa. | 9. 13. 19. 52 | 18.57.56,3 | 22. 47. 58 | 5. 11,1 | 27,3 |
| 4 | *Su.* | 9. 14. 21. 3 | 19. 2.20,3 | 22. 41. 39 | 5. 38,4 | 26,9 |
| 5 | M. | 9. 15. 22. 14 | 19. 6.43,8 | 22. 34. 53 | 6. 5,3 | 26,5 |
| 6 | Tu. | 9. 16. 23. 25 | 19.11. 6,9 | 22. 27. 40 | 6. 31,8 | 25,9 |
| 7 | W. | 9. 17. 24. 34 | 19.15.29,4 | 22. 20. 0 | 6. 57,7 | 25,3 |
| 8 | Th. | 9. 18. 25. 43 | 19.19.51,3 | 22. 11. 54 | 7. 23,0 | 24,7 |
| 9 | F. | 9. 19. 26. 51 | 19.24.12,7 | 22. 3. 23 | 7. 47,7 | 24,2 |
| 10 | Sa. | 9. 20. 27. 58 | 19.28.33,5 | 21. 54. 25 | 8. 11,9 | 23,7 |
| 11 | *Su.* | 9. 21. 29. 5 | 19.32.53,8 | 21. 45. 2 | 8. 35,6 | 23,1 |
| 12 | M. | 9. 22. 30. 12 | 19.37.13,5 | 21. 35. 13 | 8. 58,7 | 22,3 |
| 13 | Tu. | 9. 23. 31. 18 | 19.41.32,4 | 21. 25. 0 | 9. 21,0 | 21,6 |
| 14 | W. | 9. 24. 32. 23 | 19.45.50,7 | 21. 14. 22 | 9. 42,6 | 21,0 |
| 15 | Th. | 9. 25. 33. 28 | 19.50. 8,3 | 21. 3. 19 | 10. 3,6 | 20,3 |
| 16 | F. | 9. 26. 34. 32 | 19.54.25,3 | 20. 51. 53 | 10. 23,9 | 19,7 |
| 17 | Sa. | 9. 27. 35. 36 | 19.58.41,5 | 20. 40. 2 | 10. 43,6 | 18,9 |
| 18 | *Su.* | 9. 28. 36. 39 | 20. 2.57,1 | 20. 27. 48 | 11. 2,5 | 18,3 |
| 19 | M. | 9. 29. 37. 42 | 20. 7.11,9 | 20. 15. 11 | 11. 20,8 | 17,5 |
| 20 | Tu. | 10. 0. 38. 44 | 20.11.26,0 | 20. 2. 11 | 11. 38,3 | 16,8 |
| 21 | W. | 10. 1. 39. 46 | 20.15.39,4 | 19. 48. 49 | 11. 55,1 | 16,0 |
| 22 | Th. | 10. 2. 40. 48 | 20.19.52,0 | 19. 35. 4 | 12. 11,1 | 15,2 |
| 23 | F. | 10. 3. 41. 49 | 20.24. 3,9 | 19. 20. 58 | 12. 26,3 | 14,5 |
| 24 | Sa. | 10. 4. 42. 48 | 20.28.14,9 | 19. 6. 30 | 12. 40,8 | 13,7 |
| 25 | *Su.* | 10. 5. 43. 48 | 20.32.25,2 | 18. 51. 41 | 12. 54,5 | 12,9 |
| 26 | M. | 10. 6. 44. 47 | 20.36.34,7 | 18. 36. 32 | 13. 7,4 | 12,0 |
| 27 | Tu. | 10. 7. 45. 45 | 20.40.43,3 | 18. 21. 2 | 13. 19,4 | 11,3 |
| 28 | W. | 10. 8. 46. 42 | 20.44.51,2 | 18. 5. 12 | 13. 30,7 | 10,5 |
| 29 | Th. | 10. 9. 47. 38 | 20.48.58,2 | 17. 49. 3 | 13. 41,2 | 9,6 |
| 30 | F. | 10. 10. 48. 32 | 20.53. 4,4 | 17. 32. 35 | 13. 50,8 | 8,8 |
| 31 | Sa. | 10. 11. 49. 25 | 20.57. 9,7 | 17. 15. 49 | 13. 59,6 | 8,0 |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 19,2 | 1. 10,9 | 2. 32,9 | 9. 992655 | 3. 8. 42 |
| 7 | 16. 19,1 | 1. 10,5 | 2. 32,8 | 9. 992705 | 3. 8. 23 |
| 13 | 16. 18,8 | 1. 10,1 | 2. 32,8 | 9. 992843 | 3. 8. 4 |
| 19 | 16. 18,2 | 1. 9,5 | 2. 32,6 | 9. 993084 | 3. 7. 45 |
| 25 | 16. 17,5 | 1. 8,9 | 2. 32,3 | 9. 993408 | 3. 7. 26 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Immersions. | | II. Satellite. Immersions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 1 | 11* 7. 37 | 2 | 16*38. 36 | 7 | 0. 14. 40 I. |
| 3 | 5. 35. 14 | 6 | 5. 53. 45 | 7 | 3. 47. 40 E. |
| 5 | 0. 2. 49 | 9 | 19. 9. 3 | 14 | 4. 10. 5 I. |
| 6 | 18*30. 26 | 13 | 8*24. 31 | 14 | 7*42. 56 E. |
| 8 | 12*58. 5 | 16 | 21. 40. 11 | 21 | 8* 6. 13 I. |
| 10 | 7. 25. 48 | 20 | 10*56. 2 | 21 | 11*38. 50 E. |
| 12 | 1. 53. 33 | 24 | 0. 12. 5 | 28 | 12* 2. 54 I. |
| 13 | 20. 21. 21 | 27 | 13*28. 23 | 28 | 15*35. 20 E. |
| 15 | 14*49. 9 | 31 | 2. 44. 53 | | |
| 17 | 9*17. 1 | | | IV. Satellite. | |
| 19 | 3. 44. 56 | | | | |
| 20 | 22. 12. 55 | | | 11 | 15*41. 59 I. |
| 22 | 16*40. 52 | | | 11 | 20. 27. 17 E. |
| 24 | 11* 8. 54 | | | 28 | 9*35. 36 I. |
| 26 | 5. 36. 59 | | | 28 | 14*20. 18 E. |
| 28 | 0. 5. 8 | | | | |
| 29 | 18*33. 19 | | | | |
| 31 | 13* 1. 33 | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Paſſage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **Greateſt Elon. 16d. MERCURY. Inf. ☌ 31d. 5h.** | | | | | | |
| 1 | 10. 26. 38 | 6. 52 S | 9. 23. 47 | 2. 6 S | 23. 27 S | 0. 55 |
| 7 | 11. 22. 3 | 5. 39 | 10. 3. 19 | 1. 43 | 21. 7 | 1. 9 |
| 13 | 0. 22. 31 | 2. 47 S | 10. 11. 52 | 0. 53 S | 18. 6 | 1. 17 |
| 19 | 1. 28. 2 | 1. 29 N | 10. 17. 38 | 0. 31 N | 15. 4 | 1. 13 |
| 25 | 3. 5. 46 | 5. 21 | 10. 17. 55 | 2. 16 | 13. 19 | 0. 45 |
| **VENUS.** | | | | | | |
| 1 | 7. 24. 7 | 1. 11 N | 8. 21. 29 | 0. 33 N | 22. 39 S | 22. 34 |
| 7 | 8. 3. 40 | 0. 39 | 8. 29. 0 | 0. 18 | 23. 10 | 22. 40 |
| 13 | 8. 13. 12 | 0. 6 N | 9. 6. 32 | 0. 3 N | 23. 15 | 22. 47 |
| 19 | 8. 22. 43 | 0. 29 S | 9. 14. 2 | 0. 13 S | 22. 57 | 22. 54 |
| 25 | 9. 2. 13 | 1. 1 | 9. 21. 34 | 0. 27 | 22. 11 | 23. 1 |
| **MARS.** | | | | | | |
| 1 | 11. 14. 18 | 1. 40 S | 10. 18. 43 | 1. 8 S | 16. 19 S | 2. 37 |
| 7 | 11. 18. 6 | 1. 36 | 10. 23. 26 | 1. 5 | 14. 47 | 2. 29 |
| 13 | 11. 21. 52 | 1. 32 | 10. 28. 8 | 1. 2 | 13. 6 | 2. 21 |
| 19 | 11. 25. 38 | 1. 28 | 11. 2. 50 | 0. 58 | 11. 23 | 2. 13 |
| 25 | 11. 29. 22 | 1. 24 | 11. 7. 32 | 0. 55 | 9. 36 | 2. 6 |
| **JUPITER.** | | | | | | |
| 1 | 4. 18. 50 | 0. 51 N | 4. 26. 20 | 0. 59 N | 13. 41 N | 15. 4 |
| 7 | 4. 19. 19 | 0. 52 | 4. 25. 54 | 1. 1 | 13. 51 | 14. 35 |
| 13 | 4. 19. 47 | 0. 52 | 4. 25. 21 | 1. 2 | 14. 3 | 14. 7 |
| 19 | 4. 20. 15 | 0. 53 | 4. 24. 44 | 1. 3 | 14. 17 | 13. 39 |
| 25 | 4. 20. 43 | 0. 53 | 4. 24. 2 | 1. 4 | 14. 32 | 13. 11 |
| **SATURN.** | | | | | | |
| 1 | 7. 8. 15 | 2. 24 N | 7. 13. 7 | 2. 17 N | 13. 37 S | 19. 53 |
| 7 | 7. 8. 26 | 2. 24 | 7. 13. 35 | 2. 18 | 13. 44 | 19. 29 |
| 13 | 7. 8. 38 | 2. 23 | 7. 13. 59 | 2. 19 | 13. 50 | 19. 4 |
| 19 | 7. 8. 49 | 2. 23 | 7. 14. 21 | 2. 20 | 13. 56 | 18. 40 |
| 25 | 7. 9. 0 | 2. 23 | 7. 14. 40 | 2. 21 | 14. 1 | 18. 16 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | Th. | 10. 11. 7. 31 | 10. 17. 34. 17 | 2. 50. 26 S | 3.19.27 S |
| 2 | F. | 10. 24. 4. 25 | 11. 0. 38. 4 | 3. 46. 9 | 4.10. 6 |
| 3 | Sa. | 11. 7. 15. 13 | 11. 13. 56. 3 | 4. 30. 58 | 4.48.19 |
| 4 | *Su.* | 11. 20. 40. 32 | 11. 27. 28. 46 | 5. 1. 54 | 5.11.27 |
| 5 | M. | 0. 4. 20. 43 | 0. 11. 16. 20 | 5. 16. 33 | 5.17.10 |
| 6 | Tu. | 0. 18. 15. 34 | 0. 25. 18. 21 | 5. 13. 3 | 5. 4.14 |
| 7 | W. | 1. 2. 24. 27 | 1. 9. 33. 37 | 4. 50. 46 | 4.32.42 |
| 8 | Th. | 1. 16. 45. 34 | 1. 23. 59. 55 | 4. 10. 14 | 3.43.39 |
| 9 | F. | 2. 1. 16. 10 | 2. 8. 33. 46 | 3. 13. 21 | 2.39.49 |
| 10 | Sa. | 2. 15. 52. 4 | 2. 23. 10. 25 | 2. 3. 37 | 1.25.22 |
| 11 | *Su.* | 3. 0. 28. 3 | 3. 7. 44. 15 | 0. 45. 50 S | 0. 5.40 S |
| 12 | M. | 3. 14. 58. 7 | 3. 22. 9. 2 | 0. 34. 21 N | 1.13.32 N |
| 13 | Tu. | 3. 29. 16. 17 | 4. 6. 19. 13 | 1. 51. 13 | 2.26.47 |
| 14 | W. | 4. 13. 17. 19 | 4. 20. 10. 10 | 2. 59. 43 | 3.29.34 |
| 15 | Th. | 4. 26. 57. 30 | 5. 3. 39. 7 | 3. 56. 4 | 4.18.53 |
| 16 | F. | 5. 10. 15. 0 | 5. 16. 45. 7 | 4. 37. 56 | 4.53. 3 |
| 17 | Sa. | 5. 23. 9. 47 | 5. 29. 29. 15 | 5. 4. 17 | 5.11.38 |
| 18 | *Su.* | 6. 5. 43. 45 | 6. 11. 53. 49 | 5. 15. 10 | 5.15. 0 |
| 19 | M. | 6. 17. 59. 57 | 6. 24. 2. 41 | 5. 11. 17 | 5. 4. 7 |
| 20 | Tu. | 7. 0. 2. 34 | 7. 6. 0. 11 | 4. 53. 40 | 4.40. 7 |
| 21 | W. | 7. 11. 56. 13 | 7. 17. 51. 18 | 4. 23. 38 | 4. 4.22 |
| 22 | Th. | 7. 23. 46. 0 | 7. 29. 40. 59 | 3. 42. 31 | 3.18.17 |
| 23 | F. | 8. 5. 36. 51 | 8. 11. 34. 7 | 2. 51. 52 | 2.23.31 |
| 24 | Sa. | 8. 17. 33. 20 | 8. 23. 35. 1 | 1. 53. 24 | 1.21.52 |
| 25 | *Su.* | 8. 29. 39. 33 | 9. 5. 47. 22 | 0. 49. 10 N | 0.15.38 N |
| 26 | M. | 9. 11. 58. 42 | 9. 18. 13. 53 | 0. 18. 23 S | 0.52.28 S |
| 27 | Tu. | 9. 24. 33. 1 | 10. 0. 56. 17 | 1. 26. 17 | 1.59.19 |
| 28 | W. | 10. 7. 23. 40 | 10. 13. 55. 11 | 2. 31. 9 | 3. 1.19 |
| 29 | Th. | 10. 20. 30. 42 | 10. 27. 10. 6 | 3. 29. 21 | 3.54.45 |
| 30 | F. | 11. 3. 53. 8 | 11. 10. 39. 35 | 4. 17. 11 | 4.36. 9 |
| 31 | Sa. | 11. 17. 29. 8 | 11. 24. 21. 29 | 4. 51. 21 | 5. 2 27 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Passage over Merid. | ☽'s Right Ascen. at Noon. | ☽'s Right Asc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | Th. | 4 | 2. 13 | 314. 25 | 321. 5 | 20. 11 S | 18. 45 S |
| 2 | F. | 5 | 3. 3 | 327. 41 | 334. 13 | 17. 4 | 15. 9 |
| 3 | Sa. | 6 | 3. 52 | 340. 41 | 347. 5 | 13. 2 | 10. 45 |
| 4 | *Su.* | 7 | 4. 40 | 353. 26 | 359. 45 | 8. 19 | 5. 46 |
| 5 | M. | 8 | 5. 28 | 6. 4 | 12. 25 | 3. 7 S | 0. 24 S |
| 6 | Tu. | 9 | 6. 17 | 18. 50 | 25. 18 | 2. 20 N | 5. 4 N |
| 7 | W. | 10 | 7. 7 | 31. 54 | 38. 36 | 7. 46 | 10. 23 |
| 8 | Th. | 11 | 8. 0 | 45. 30 | 52. 34 | 12. 52 | 15. 11 |
| 9 | F. | 12 | 8. 56 | 59. 50 | 67. 16 | 17. 17 | 19. 7 |
| 10 | Sa. | 13 | 9. 55 | 74. 53 | 82. 38 | 20. 40 | 21. 52 |
| 11 | *Su.* | 14 | 10. 56 | 90. 30 | 98. 25 | 22. 42 | 23. 9 |
| 12 | M. | 15 | 11. 57 | 106. 19 | 114. 9 | 23. 12 | 22. 51 |
| 13 | Tu. | 16 | 12. 55 | 121. 51 | 129. 21 | 22. 9 | 21. 5 |
| 14 | W. | 17 | 13. 51 | 136. 40 | 143. 44 | 19. 43 | 18. 5 |
| 15 | Th. | 18 | 14. 42 | 150. 35 | 157. 11 | 16. 14 | 14. 12 |
| 16 | F. | 19 | 15. 29 | 163. 34 | 169. 44 | 12. 1 | 9. 44 |
| 17 | Sa. | 20 | 16. 13 | 175. 45 | 181. 36 | 7. 22 | 4. 58 |
| 18 | *Su.* | 21 | 16. 55 | 187. 20 | 192. 59 | 2. 33 N | 0. 8 N |
| 19 | M. | 22 | 17. 37 | 198. 34 | 204. 7 | 2. 16 S | 4. 37 S |
| 20 | Tu. | 23 | 18. 18 | 209. 41 | 215. 15 | 6. 55 | 9. 8 |
| 21 | W. | 24 | 19. 1 | 220. 52 | 226. 33 | 11. 15 | 13. 15 |
| 22 | Th. | 25 | 19. 45 | 232. 20 | 238. 13 | 15. 8 | 16. 52 |
| 23 | F. | 26 | 20. 32 | 244. 14 | 250. 23 | 18. 27 | 19. 50 |
| 24 | Sa. | 27 | 21. 21 | 256. 40 | 263. 5 | 21. 1 | 21. 57 |
| 25 | *Su.* | 28 | 22. 12 | 269. 38 | 276. 17 | 22. 39 | 23. 5 |
| 26 | M. | 29 | 23. 4 | 283. 3 | 289. 53 | 23. 14 | 23. 6 |
| 27 | Tu. | 30 | 23. 57 | 296. 45 | 303. 37 | 22. 39 | 21. 55 |
| 28 | W. | 1 | ♂ | 310. 29 | 317. 19 | 20. 53 | 19. 34 |
| 29 | Th. | 2 | 0. 49 | 324. 5 | 330. 46 | 17. 58 | 16. 8 |
| 30 | F. | 3 | 1. 40 | 337. 23 | 343. 56 | 14. 5 | 11. 50 |
| 31 | Sa. | 4 | 2. 29 | 350. 25 | 356. 50 | 9. 25 | 6. 51 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | Th. | 15. 23 | 15. 27 | 56. 27 | 56. 41 | 5036 | 5018 |
| 2 | F. | 15. 31 | 15. 35 | 56. 56 | 57. 12 | 4999 | 4979 |
| 3 | Sa. | 15. 39 | 15. 43 | 57. 27 | 57. 43 | 4960 | 4940 |
| 4 | *Su.* | 15. 48 | 15. 52 | 57. 59 | 58. 16 | 4919 | 4898 |
| 5 | M. | 15. 57 | 16. 1 | 58. 32 | 58. 47 | 4878 | 4860 |
| 6 | Tu. | 16. 6 | 16. 9 | 59. 4 | 59. 18 | 4839 | 4822 |
| 7 | W. | 16. 13 | 16. 17 | 59. 32 | 59. 45 | 4805 | 4789 |
| 8 | Th. | 16. 20 | 16. 22 | 59. 56 | 60. 6 | 4776 | 4764 |
| 9 | F. | 16. 24 | 16. 25 | 60. 12 | 60. 16 | 4757 | 4752 |
| 10 | Sa. | 16. 26 | 16. 25 | 60. 19 | 60. 17 | 4748 | 4751 |
| 11 | *Su.* | 16. 24 | 16. 22 | 60. 12 | 60. 3 | 4757 | 4768 |
| 12 | M. | 16. 19 | 16. 15 | 59. 52 | 59. 37 | 4781 | 4799 |
| 13 | Tu. | 16. 10 | 16. 5 | 59. 19 | 59. 1 | 4821 | 4843 |
| 14 | W. | 15. 58 | 15. 52 | 58. 37 | 58. 15 | 4872 | 4900 |
| 15 | Th. | 15. 45 | 15. 39 | 57. 49 | 57. 25 | 4932 | 4962 |
| 16 | F. | 15. 32 | 15. 25 | 57. 0 | 56. 36 | 4994 | 5025 |
| 17 | Sa. | 15. 19 | 15. 13 | 56. 14 | 55. 52 | 5053 | 5081 |
| 18 | *Su.* | 15. 8 | 15. 3 | 55. 31 | 55. 15 | 5108 | 5129 |
| 19 | M. | 14. 59 | 14. 55 | 54. 59 | 54. 46 | 5150 | 5167 |
| 20 | Tu. | 14. 53 | 14. 51 | 54. 35 | 54. 28 | 5182 | 5191 |
| 21 | W. | 14. 50 | 14. 49 | 54. 26 | 54. 20 | 5194 | 5202 |
| 22 | Th. | 14. 48 | 14. 49 | 54. 19 | 54. 23 | 5203 | 5198 |
| 23 | F. | 14. 50 | 14. 52 | 54. 27 | 54. 35 | 5193 | 5182 |
| 24 | Sa. | 14. 55 | 14. 58 | 54. 43 | 54. 54 | 5171 | 5157 |
| 25 | *Su.* | 15. 1 | 15. 5 | 55. 7 | 55. 21 | 5140 | 5122 |
| 26 | M. | 15. 9 | 15. 13 | 55. 36 | 55. 52 | 5102 | 5081 |
| 27 | Tu. | 15. 18 | 15. 22 | 56. 9 | 56. 25 | 5059 | 5038 |
| 28 | W. | 15. 27 | 15. 31 | 56. 42 | 56. 59 | 5017 | 4995 |
| 29 | Th. | 15. 36 | 15. 40 | 57. 15 | 57. 31 | 4975 | 4955 |
| 30 | F. | 15. 44 | 15. 48 | 57. 45 | 57. 59 | 4937 | 4919 |
| 31 | Sa. | 15. 52 | 15. 55 | 58. 11 | 58. 25 | 4905 | 4887 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 84. 1. 57 | 82. 28. 34 | 80. 55. 4 | 79. 21. 26 |
| 2 | α Arietis. | 71. 31. 11 | 69. 56. 44 | 68. 22. 10 | 66. 47. 39 |
| 3 | | 58. 52. 58 | 57. 17. 53 | 55. 42. 46 | 54. 7. 38 |
| 4 | | 75. 38. 12 | 73. 56. 58 | 72. 15. 31 | 70. 33. 50 |
| 5 | | 62. 2. 14 | 60. 19. 15 | 58. 36. 3 | 56. 52. 38 |
| 6 | Aldebaran. | 48. 12. 14 | 46. 27. 29 | 44. 42. 32 | 42. 57. 22 |
| 7 | | 34. 8. 31 | 32. 22. 10 | 30. 35. 41 | 28. 49. 2 |
| 8 | | 19. 53. 58 | | | |
| 8 | | 64. 12. 27 | 62. 24. 50 | 60. 37. 3 | 58. 49. 7 |
| 9 | Pollux. | 49. 47. 48 | 47. 59. 16 | 46. 10. 43 | 44. 22. 8 |
| 10 | | 35. 19. 31 | | | |
| 10 | | 70. 54. 29 | 69. 4. 47 | 67. 15. 3 | 65. 25. 21 |
| 11 | Regulus. | 56. 17. 23 | 54. 28. 0 | 52. 38. 46 | 50. 49. 39 |
| 12 | | 41. 46. 30 | 39. 58. 28 | 38. 10. 42 | 36. 23. 12 |
| 13 | | 27. 30. 16 | 25. 44. 46 | 23. 59. 41 | 22. 15. 1 |
| 14 | | 67. 36. 56 | 65. 54. 2 | 64. 11. 32 | 62. 29. 25 |
| 15 | Spica ♍ | 54. 4. 53 | 52. 25. 14 | 50. 46. 1 | 49. 7. 15 |
| 16 | | 41. 0. 12 | 39. 24. 14 | 37. 48. 45 | 36. 13. 48 |
| 17 | | 28. 27. 11 | | | |
| 17 | | 74. 1. 50 | 72. 27. 39 | 70. 53. 50 | 69. 20. 22 |
| 18 | Antares. | 61. 38. 0 | 60. 6. 28 | 58. 35. 13 | 57. 4. 16 |
| 19 | | 49. 33. 41 | 48. 4. 22 | 46. 35. 18 | 45. 6. 29 |
| 20 | | 37. 46. 9 | | | |
| 17 | | | | 121. 22. 16 | 119. 55. 35 |
| 18 | | 112. 46. 48 | 111. 21. 57 | 109. 57. 21 | 108. 33. 1 |
| 19 | | 101. 34. 52 | 100. 11. 54 | 98. 49. 7 | 97. 26. 32 |
| 20 | The Sun. | 90. 36. 2 | 89. 14. 22 | 87. 52. 49 | 86. 31. 22 |
| 21 | | 79. 45. 22 | 78. 24. 20 | 77. 3. 20 | 75. 42. 22 |
| 22 | | 68. 57. 36 | 67. 36. 35 | 66. 15. 30 | 64. 54. 22 |
| 23 | | 58. 7. 38 | 56. 46. 1 | 55. 24. 18 | 54. 2. 27 |
| 24 | | 47. 11. 12 | 45. 48. 31 | 44. 25. 39 | 43. 2. 36 |
| 30 | | 62. 4. 58 | 60. 28. 5 | 58. 51. 11 | 57. 14. 17 |
| 31 | α Arietis. | 49. 10. 15 | 47. 33. 42 | 45. 57. 24 | 44. 21. 20 |
| F. 1 | | 36. 26. 10 | | | |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

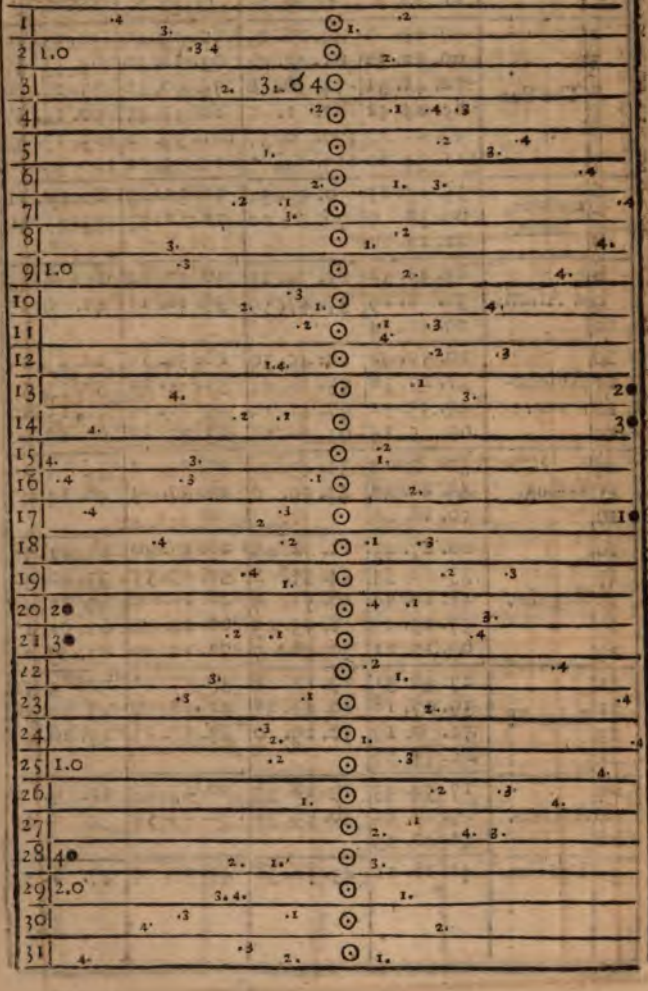
| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 77. 47. 40 | 76. 13. 44 | 74. 39. 41 | 73. 5. 30 |
| 2 | ♈ Arietis. | 65. 12. 44 | 63. 37. 54 | 62. 2. 59 | 60. 28. 1 |
| 3 | | 52. 32. 29 | | | |
| 3 | | 82. 20. 58 | 80. 40. 30 | 79. 0. 1 | 77. 19. 13 |
| 4 | | 68. 51. 57 | 67. 9. 51 | 65. 27. 32 | 63. 45. 0 |
| 5 | Aldebaran. | 55. 9. 0 | 53. 25. 8 | 51. 41. 3 | 49. 56. 45 |
| 6 | | 41. 11. 59 | 39. 26. 24 | 37. 40. 38 | 35. 54. 40 |
| 7 | | 27. 2. 14 | 25. 15. 19 | 23. 28. 18 | 21. 41. 10 |
| 8 | | 57. 1. 4 | 55. 12. 53 | 53. 24. 37 | 51. 36. 15 |
| 9 | Pollux. | 42. 33. 32 | 40. 44. 58 | 38. 56. 25 | 37. 7. 56 |
| 10 | | 63. 35. 39 | 61. 45. 59 | 59. 56. 23 | 58. 6. 51 |
| 11 | | 49. 0. 39 | 47. 11. 50 | 45. 23. 11 | 43. 34. 45 |
| 12 | Regulus. | 34. 35. 57 | 32. 49. 2 | 31. 2. 25 | 29. 16. 9 |
| 13 | | 20. 30. 49 | | | |
| 13 | | 74. 32. 10 | 72. 47. 49 | 71. 3. 51 | 69. 20. 12 |
| 14 | | 60. 47. 41 | 59. 6. 22 | 57. 25. 27 | 55. 44. 58 |
| 15 | Spica ♍ | 47. 28. 55 | 45. 51. 2 | 44. 13. 37 | 42. 36. 40 |
| 16 | | 34. 39. 22 | 33. 5. 29 | 31. 32. 9 | 29. 59. 23 |
| 17 | | 67. 47. 16 | 66. 14. 28 | 64. 41. 59 | 63. 9. 50 |
| 18 | Antares. | 55. 33. 36 | 54. 3. 13 | 52. 33. 6 | 51. 3. 16 |
| 19 | | 43. 37. 55 | 42. 9. 36 | 40. 41. 33 | 39. 13. 43 |
| 17 | | 118. 29. 13 | 117. 3. 10 | 115. 37. 2 | 114. 11. 58 |
| 18 | | 107. 8. 55 | 105. 45. 4 | 104. 21. 27 | 102. 58. 3 |
| 19 | | 96. 4. 7 | 94. 41. 53 | 93. 19. 47 | 91. 57. 50 |
| 20 | The Sun. | 85. 1. 2 | 83. 48. 46 | 82. 27. 34 | 81. 6. 26 |
| 21 | | 74. 21. 25 | 73. 0. 29 | 71. 39. 32 | 70. 18. 34 |
| 22 | | 63. 33. 11 | 62. 11. 55 | 60. 50. 35 | 59 29. 9 |
| 23 | | 52. 40. 30 | 51. 18. 24 | 49. 56. 8 | 48. 33. 45 |
| 24 | | 41. 39. 24 | 40. 16. 1 | 38. 52. 27 | |
| 29 | | 68. 31. 42 | 66. 55. 10 | 65. 18. 32 | 63. 41. 47 |
| 30 | ♈ Arietis. | 55. 37. 22 | 54. 0. 27 | 52. 23. 35 | 50. 46. 54 |
| 31 | | 42. 45. 31 | 41. 10. 3 | 39. 34. 59 | 38. 0. 20 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 2 | The Sun. | 41. 54. 3 | 43. 24. 30 | 44. 55. 8 | 46. 26. 1 |
| 3 | | 54. 3. 7 | 55. 35. 10 | 57. 7. 24 | 58. 39. 52 |
| 4 | | 66. 25. 18 | 67. 59. 2 | 69. 32. 58 | 71. 7. 8 |
| 5 | | 79. 1. 16 | 80. 36. 48 | 82. 12. 31 | 83. 48. 30 |
| 6 | | 91. 51. 42 | 93. 29. 2 | 95. 6. 36 | 96. 44. 23 |
| 7 | | 104. 56. 35 | 106. 35. 41 | 108. 14. 59 | 109. 54. 29 |
| 8 | | 118. 14. 57 | 119. 55. 35 | 121. 36. 24 | |
| 6 | Fomal-haut. | 48. 42. 5 | 50. 19. 6 | 51. 56. 40 | 53. 34. 47 |
| 7 | | 61. 52. 39 | 63. 33. 29 | 65. 14. 41 | 66. 56. 14 |
| 8 | | 75. 28. 45 | 77. 12. 4 | 78. 55. 37 | 80. 39. 23 |
| 9 | α Arietis. | 29. 41. 33 | 31. 16. 12 | 32. 52. 16 | 34. 29. 42 |
| 10 | | 42. 51. 6 | 44. 33. 25 | 46. 16. 13 | 47. 59. 20 |
| 11 | Aldeba-ran. | 24. 12. 10 | 26. 1. 11 | 27. 50. 9 | 29. 39. 5 |
| 12 | | 38. 42. 14 | 40. 30. 26 | 42. 18. 26 | 44. 6. 14 |
| 13 | | 53. 1. 46 | 54. 48. 5 | 56. 34. 6 | 58. 19. 49 |
| 14 | | 67. 3. 35 | | | |
| 14 | Pollux. | 23. 19. 59 | 25. 0. 55 | 26. 41. 48 | 28. 22. 34 |
| 15 | | 36. 44. 4 | 38. 23. 39 | 40. 2. 56 | 41. 41. 56 |
| 16 | | 49. 52. 12 | 51. 29. 13 | 53. 5. 55 | 54. 42. 17 |
| 17 | Regulus. | 26. 46. 42 | 28. 20. 52 | 29. 54. 48 | 31. 28. 28 |
| 18 | | 39. 12. 54 | 40. 45. 0 | 42. 16. 52 | 43. 48. 30 |
| 19 | | 51. 23. 21 | 52. 53. 42 | 54. 23. 53 | 55. 53. 53 |
| 20 | | 63. 21. 31 | 64. 50. 37 | 66. 19. 38 | 67. 48. 32 |
| 21 | | 75. 11. 58 | | | |
| 21 | Spica ♍ | 22. 8. 0 | 23. 32. 4 | 24. 56. 31 | 26. 21. 21 |
| 22 | | 33. 30. 9 | 34. 56. 38 | 36. 23. 19 | 37. 50. 12 |
| 23 | | 45. 7. 24 | 46. 35. 21 | 48. 3. 30 | 49. 31. 49 |
| 24 | | 56. 56. 12 | 58. 25. 43 | 59. 55. 22 | 61. 25. 16 |
| 25 | Antares. | 23. 35. 48 | 25. 3. 15 | 26. 31. 26 | 28. 0. 17 |
| 26 | | 35. 31. 57 | 37. 3. 38 | 38. 35. 39 | 40. 8. 2 |
| 31 | The Sun. | | | 39. 6. 16 | 40. 41. 13 |
| F. 1 | | 48. 38. 23 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 2 | | 47. 57. 2 | 49. 28. 15 | 50. 59. 40 | 52. 31. 18 |
| 3 | | 60. 12. 32 | 61. 45. 24 | 63. 18. 30 | 64. 51. 47 |
| 4 | The Sun. | 72. 41. 31 | 74. 16. 6 | 75. 50. 56 | 77. 25. 59 |
| 5 | | 85. 24. 42 | 87. 1. 7 | 88. 37. 45 | 90. 14. 37 |
| 6 | | 98. 22. 24 | 100. 0. 37 | 101. 39. 4 | 103. 17. 43 |
| 7 | | 111. 34. 12 | 113. 14. 7 | 114. 54. 12 | 116. 34. 29 |
| 6 | | 55. 13. 25 | 56. 52. 34 | 58. 32. 9 | 60. 12. 11 |
| 7 | Fomal-haut. | 68. 38. 9 | 70. 20. 22 | 72. 2. 53 | 73. 45. 40 |
| 8 | | 82. 23. 21 | | | |
| 8 | | 23. 42. 52 | 25. 9. 13 | 26. 37. 54 | 28. 8. 45 |
| 9 | α Arietis. | 36. 8. 29 | 37. 47. 59 | 39. 28. 15 | 41. 9. 17 |
| 10 | | 49. 42. 44 | | | |
| 10 | | 16. 56. 48 | 18. 45. 30 | 20. 34. 19 | 22. 23. 11 |
| 11 | Aldeba- | 31. 27. 58 | 33. 16. 44 | 35. 5. 22 | 36. 53. 52 |
| 12 | ran. | 45. 53. 50 | 47. 41. 10 | 49. 28. 18 | 51. 15. 10 |
| 13 | | 60. 5. 14 | 61. 50. 19 | 63. 35. 5 | 65. 19. 30 |
| 14 | | 30. 3. 14 | 31. 43. 45 | 33. 24. 4 | 35. 4. 10 |
| 15 | Pollux. | 43. 20. 38 | 44. 59. 0 | 46. 37. 3 | 48. 14. 47 |
| 16 | | 56. 18. 20 | | | |
| 16 | | 20. 27. 45 | 22. 2. 49 | 23. 37. 40 | 25. 12. 18 |
| 17 | | 33. 1. 54 | 34. 35. 2 | 36. 7. 55 | 37. 40. 32 |
| 18 | Regulus. | 45. 19. 54 | 46. 51. 4 | 48. 22. 2 | 49. 52. 48 |
| 19 | | 57. 23. 43 | 58. 53. 23 | 60. 22. 54 | 61. 52. 17 |
| 20 | | 69. 17. 21 | 70. 46. 5 | 72. 14. 46 | 73. 43. 23 |
| 21 | | 27. 46. 31 | 29. 12. 1 | 30. 37. 48 | 32. 3. 52 |
| 22 | Spica ♍ | 39. 17. 18 | 40. 44. 33 | 42. 11. 59 | 43. 39. 36 |
| 23 | | 51. 0. 19 | 52. 29. 0 | 53. 57. 53 | 55. 26. 57 |
| 24 | | 62. 55. 20 | | | |
| 24 | | 17. 54. 43 | 19. 18. 33 | 20. 43. 23 | 22. 9. 9 |
| 25 | Antares. | 29. 29. 42 | 30. 59. 34 | 32. 29. 54 | 34. 0. 42 |
| 26 | | 41. 40. 43 | | | |
| 31 | The Sun. | 42. 16. 21 | 43. 51. 38 | 45. 27. 4 | 47. 2. 39 |

## Configurations of the SATELLITES of JUPITER at 11 o' Clock at Night.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | *Su.* | *4th Sunday after Epiph.* |
| 2 | M. | *Purif. of V. Mary.* |
| 3 | Tu. | Blas. On mor. of Purif. |
| 4 | W. | [3 ret. |
| 5 | Th. | Agatha. |
| 6 | F. | |
| 7 | Sa. | |
| 8 | *Su.* | *5th Sunday after Epiph.* |
| 9 | M. | In 8 days of Purif. 4 ret. |
| 10 | Tu. | |
| 11 | W. | |
| 12 | Th. | Hilary Term ends. |
| 13 | F. | |
| 14 | Sa. | Valentine. |
| 15 | *Su.* | *Septuagesima Sunday.* |
| 16 | M. | |
| 17 | Tu. | |
| 18 | W. | |
| 19 | Th. | |
| 20 | F. | |
| 21 | Sa. | |
| 22 | *Su.* | *Sexagesima-Sunday.* |
| 23 | M. | [*St. Matthias.* |
| 24 | Tu. | *Pr. Adolphus Fred. born.* |
| 25 | W. | Camb. Ter. divides m. |
| 26 | Th. | |
| 27 | F. | |
| 28 | Sa. | |

Phases of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter — | 4. | 4. | 37 |
| Full Moon — | 11. | 2. | 46 |
| Last Quarter — | 18. | 22. | 45 |
| New Moon — | 26. | 16. | 47 |

D. Other Phenomena.

2. ☿ ♒ diff Lat. 13′.
3. ☾ 2 ad ♈ Ceti 8ʰ. 43′.
☾ μ Cet 16ʰ. 19′.
5. ☾ 1 ad ☌ ♉ 10ʰ. 37′.
☾ 2 ad ☌ ♉ 11ʰ. 4′.
☾ ♉ 13ʰ. 19′.
6. ☾ ♑ ♉ 17ʰ. 0′.
7. ☾ ν ♊ 7ʰ. 41′.
☾ μ ♊ Im. 11ʰ. 9′. * 12′½ N. of ☽'s cent. Em. 11ʰ. 55′. * 12′ North.
8. ☾ ☌ ♊ 9ʰ. 23′.
12. ☿ Stationary.
13. ☾ ☍ ♏ 22ʰ. 42′.
17. ☉ enters ♓ at 23ʰ. 39′.
18. ☾ γ ☌ 4ʰ. 38′.
☾ ν ☌ 9ʰ. 10′.
☾ θ ☌ 14ʰ. 14′.
20. ☾ ♇ Serpentar. 8ʰ. 48′.
21. ☿ ☍ ♒ diff. Lat. 48′.
25. ☾ γ ♍ 5ʰ. 22′.
☾ ☌ ♍ 8ʰ. 31′.
26. ♄ Stationary.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | *Su.* | 10. 12. 50. 17 | 21. 1. 14,3 | 16.58.44 | 14. 7,6 | 7,6 |
| 2 | M. | 10. 13. 51. 7 | 21. 5. 18,1 | 16.41.21 | 14. 14,6 | 6,2 |
| 3 | Tu. | 10. 14. 51. 56 | 21. 9. 20,7 | 16.23.42 | 14. 20,8 | 5,4 |
| 4 | W. | 10. 15. 52. 43 | 21. 13. 22,7 | 16. 5.45 | 14. 26,2 | 4. 6 |
| 5 | Th. | 10. 16. 53. 28 | 21. 17. 23,8 | 15.47.32 | 14. 30,8 | 3,7 |
| 6 | F. | 10. 17. 54. 12 | 21. 21. 24,1 | 15.29. 3 | 14. 34,5 | 2,9 |
| 7 | Sa. | 10. 18. 54. 54 | 21. 25. 23,5 | 15.10.18 | 14. 37,4 | 2,1 |
| 8 | *Su.* | 10. 19. 55. 34 | 21. 29. 22,1 | 14.51.18 | 14. 39,5 | 1,3 |
| 9 | M. | 10. 20. 56. 13 | 21. 33. 20,1 | 14.32. 3 | 14. 40,8 | 0,4 |
| 10 | Tu. | 10. 21. 56. 50 | 21. 37. 17,0 | 14.12.34 | 14. 41,2 | 0,3 |
| 11 | W. | 10. 22. 57. 25 | 21. 41. 13,2 | 13.52 51 | 14. 40,9 | 1,1 |
| 12 | Th. | 10. 23. 57. 59 | 21. 45. 8,7 | 13.32.54 | 14. 39,8 | 1,9 |
| 13 | F. | 10. 24. 58. 32 | 21. 49. 3,4 | 13.12.44 | 14. 37,9 | 2,6 |
| 14 | Sa. | 10. 25. 59. 3 | 21. 52. 57,4 | 12.52.21 | 14. 35,3 | 3,3 |
| 15 | *Su.* | 10. 26. 59. 32 | 21. 56. 50,6 | 12.31.46 | 14. 32,0 | 4,1 |
| 16 | M. | 10. 28. 0. 0 | 22. 0. 43,1 | 12.10.58 | 14. 27,9 | 4,7 |
| 17 | Tu. | 10. 29. 0. 27 | 22. 4. 34,9 | 11.49.59 | 14. 23,2 | 5,4 |
| 18 | W. | 11. 0. 0. 53 | 22. 8. 26,1 | 11.28.49 | 14. 17,8 | 6,0 |
| 19 | Th. | 11. 1. 1. 17 | 22. 12. 16,5 | 11. 7.28 | 14. 11,8 | 6,7 |
| 20 | F. | 11. 2. 1. 39 | 22. 16. 6,3 | 10 45.56 | 14. 5,1 | 7,4 |
| 21 | Sa. | 11. 3. 2. 0 | 22. 19. 55,5 | 10.24.14 | 13. 57,7 | 8,0 |
| 22 | *Su.* | 11. 4. 2. 20 | 22. 23. 44,1 | 10. 2.23 | 13. 49,7 | 8,5 |
| 23 | M. | 11. 5. 2. 39 | 22. 27. 32,1 | 9.40.23 | 13. 41,2 | 9,2 |
| 24 | Tu. | 11. 6. 2. 56 | 22. 31. 19,4 | 9.18.13 | 13. 32,0 | 9,7 |
| 25 | W. | 11. 7. 3. 12 | 22. 35. 6,2 | 8.55.55 | 13. 22,3 | 10,3 |
| 26 | Th. | 11. 8. 3. 26 | 22. 38. 52,5 | 8.33.29 | 13. 12. 0 | 10,9 |
| 27 | F. | 11. 9. 3. 37 | 22. 42. 38,1 | 8.10.56 | 13. 1. 1 | 11,4 |
| 28 | Sa. | 11. 10. 3. 47 | 22. 46. 23,2 | 7 48.16 | 12. 49. 7 | 12,0 |

| Days | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 16,5 | 1. 8,1 | 2. 32,1 | 9. 993853 | 3. 7. 4 |
| 7 | 16. 15,5 | 1. 7,4 | 2. 31,8 | 9. 994290 | 3. 6. 45 |
| 13 | 16. 14,3 | 1. 6,7 | 2. 31,5 | 9. 994804 | 3. 6. 26 |
| 19 | 16. 13,0 | 1. 6,2 | 2. 31,0 | 9. 995394 | 3. 6. 7 |
| 25 | 16. 11,6 | 1. 5,5 | 2. 30,5 | 9. 996031 | 3. 5. 48 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Immersions. | | II. Satellite. Immersions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 2 | 7*29. 48 | 3 | 16* 1. 39 | 4 | 16* 0. 34 I. |
| 4 | 1. 58. 8 | 7 | 5. 18. 43 | 4 | 19. 32. 47 E. |
| 5 | 20. 26. 34 | | Emersions. | 11 | 19. 58. 56 I. |
| 7 | 14*54. 59 | 10 | 21. 26. 9 | 11 | 23. 30. 56 E. |
| 9 | 9*23. 28 | 14 | 10*43. 37 | 18 | 23. 58. 8 I. |
| | Emersions. | 18 | 0. 1. 16 | 19 | 3. 29. 55 E. |
| 11 | 6* 7. 48 | 21 | 13*19. 12 | 26 | 3. 57. 59 I. |
| 13 | 0. 36. 23 | 25 | 2. 37. 18 | 26 | 7*29. 28 E. |
| 14 | 19. 4. 59 | 28 | 15*55. 42 | | |
| 16 | 13*33. 40 | | | IV. Satellite. | |
| 18 | 8* 2. 22 | | | | |
| 20 | 2. 31. 6 | | | 14 | 3. 33. 40 I. |
| 21 | 20. 59. 53 | | | 14 | 8*17. 34 E. |
| 23 | 15*28. 40 | | | | |
| 25 | 9*57. 31 | | | | |
| 27 | 4. 26. 24 | | | | |
| 28 | 22. 55. 19 | | | | |

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** Gr. Elong. 26d. | | | | | | |
| 1 | 4. 16. 17 | 6. 59 N | 10. 11. 2 | 3. 37 N | 14. 0 S | 23. 44 |
| 7 | 5. 15. 7 | 6. 6 | 10. 4. 55 | 3. 21 | 15. 48 | 22. 56 |
| 13 | 6. 8. 57 | 4. 13 | 10. 3. 0 | 2. 16 | 17. 18 | 22. 28 |
| 19 | 6. 29. 14 | 2. 1 N | 10. 5. 10 | 1. 2 N | 18. 0 | 22. 16 |
| 25 | 7. 17. 18 | 0. 11 S | 10. 10. 0 | 0. 5 S | 17. 51 | 22. 15 |
| **VENUS.** | | | | | | |
| 1 | 9. 13. 17 | 1. 38 S | 10. 0. 20 | 0. 43 S | 20. 48 S | 23. 12 |
| 7 | 9. 22. 46 | 2. 6 | 10. 7. 50 | 0. 55 | 19. 13 | 23. 19 |
| 13 | 10. 2. 15 | 2. 30 | 10. 15. 21 | 1. 5 | 17. 16 | 23. 25 |
| 19 | 10. 11. 44 | 2. 51 | 10. 22. 52 | 1. 13 | 15. 3 | 23. 31 |
| 25 | 10. 21. 13 | 3. 7 | 11. 0. 22 | 1. 20 | 12. 36 | 23. 38 |
| **MARS.** | | | | | | |
| 1 | 0. 3. 43 | 1. 18 S | 11. 13. 0 | 0. 50 S | 7. 28 S | 1. 57 |
| 7 | 0. 7. 25 | 1. 12 | 11. 17. 39 | 0. 47 | 5. 36 | 1. 50 |
| 13 | 0. 11. 5 | 1. 7 | 11. 22. 18 | 0. 43 | 3. 43 | 1. 44 |
| 19 | 0. 14. 44 | 1. 1 | 11. 26. 56 | 0. 39 | 1. 49 S | 1. 37 |
| 25 | 0. 18. 22 | 0. 55 | 0. 1. 33 | 0. 35 | 0. 6 N | 1. 31 |
| **JUPITER.** ☌ 10d. 0h¾. | | | | | | |
| 1 | 4. 21. 17 | 0. 54 N | 4. 23. 10 | 1. 6 N | 14. 51 N | 12. 40 |
| 7 | 4. 21. 45 | 0. 54 | 4. 22. 23 | 1. 6 | 15. 7 | 12. 13 |
| 13 | 4. 22. 13 | 0. 55 | 4. 21. 35 | 1. 7 | 15. 23 | 11. 46 |
| 19 | 4. 22. 41 | 0. 55 | 4. 20. 49 | 1. 7 | 15. 38 | 11. 20 |
| 25 | 4. 23. 9 | 0. 55 | 4. 20. 2 | 1. 8 | 15. 53 | 10. 54 |
| **SATURN.** □ 3d. 3h½. | | | | | | |
| 1 | 7. 9. 13 | 2. 23 N | 7. 14. 57 | 2. 23 N | 14. 3 S | 17. 49 |
| 7 | 7. 9. 24 | 2. 23 | 7. 15. 8 | 2. 25 | 14. 6 | 17. 25 |
| 13 | 7. 9. 35 | 2. 23 | 7. 15. 16 | 2. 26 | 14. 6 | 17. 2 |
| 19 | 7. 9. 47 | 2. 22 | 7. 15. 19 | 2. 27 | 14. 6 | 16. 39 |
| 25 | 7. 9. 59 | 2. 22 | 7. 15. 20 | 2. 29 | 14. 5 | 16. 17 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | Su. | 0. 1. 16. 22 | 0. 8. 13. 23 | 5. 9. 14 S | 5. 11. 31 S |
| 2 | M. | 0. 15. 12. 18 | 0. 22. 12. 44 | 5. 9. 11 | 5. 2. 15 |
| 3 | Tu. | 0. 29. 14. 32 | 1. 6. 17. 19 | 4. 50. 45 | 4. 34. 50 |
| 4 | W. | 1. 13. 20. 57 | 1. 20. 25. 14 | 4. 14. 44 | 3. 50. 43 |
| 5 | Th. | 1. 27. 29. 56 | 2. 4. 34. 50 | 3. 23. 8 | 2. 52. 26 |
| 6 | F. | 2. 11. 39. 52 | 2. 18. 44. 39 | 2. 19. 5 | 1. 43. 36 |
| 7 | Sa. | 2. 25. 49. 2 | 3. 2. 52. 45 | 1. 6. 36 S | 0. 28. 38 S |
| 8 | Su. | 3. 9. 55. 29 | 3. 16. 56. 54 | 0. 9. 38 N | 0. 47. 36 N |
| 9 | M. | 3. 23. 56. 37 | 4. 0. 54. 16 | 1. 24. 39 | 2. 0. 12 |
| 10 | Tu. | 4. 7. 49. 24 | 4. 14. 41. 36 | 2. 33. 42 | 3. 4. 42 |
| 11 | W. | 4. 21. 30. 32 | 4. 28. 15. 41 | 3. 32. 44 | 3 57. 29 |
| 12 | Th. | 5. 4. 56. 52 | 5. 11. 33. 48 | 4. 18. 41 | 4. 36. 10 |
| 13 | F. | 5. 18. 6. 16 | 5. 24. 34. 10 | 4. 49. 47 | 4 59. 30 |
| 14 | Sa. | 6. 0. 57. 28 | 6. 7. 16. 18 | 5. 5. 18 | 5. 7. 20 |
| 15 | Su. | 6. 13. 30. 46 | 6. 19. 41. 5 | 5. 5. 38 | 5. 0. 23 |
| 16 | M. | 6. 25. 47. 40 | 7. 1. 50. 55 | 4. 51. 43 | 4. 39. 52 |
| 17 | Tu. | 7. 7. 51. 13 | 7. 13. 49. 15 | 4. 24. 59 | 4. 7. 20 |
| 18 | W. | 7. 19. 45. 26 | 7. 25. 40. 29 | 3. 47. 5 | 3. 24. 25 |
| 19 | Th. | 8. 1. 35. 7 | 8. 7. 29. 49 | 2. 59. 34 | 2. 32. 52 |
| 20 | F. | 8. 13. 25. 26 | 8. 19. 22. 34 | 2. 4. 24 | 1 34. 28 |
| 21 | Sa. | 8. 25. 21. 51 | 9. 1. 24. 3 | 1. 3. 19 N | 0. 31. 16 N |
| 22 | Su. | 9. 7. 29. 4 | 9. 13. 39. 18 | 0. 1. 26 S | 0. 34. 28 S |
| 23 | M. | 9. 19. 53. 25 | 9. 26. 12. 23 | 1. 7. 26 | 1. 39. 57 |
| 24 | Tu. | 10. 2. 36. 38 | 10. 9. 6. 16 | 2. 11. 37 | 2. 42. 0 |
| 25 | W. | 10. 15. 41. 31 | 10. 22. 22. 16 | 3. 10. 35 | 3. 36. 57 |
| 26 | Th. | 10. 29. 8. 28 | 11. 5. 59. 46 | 4. 0. 35 | 4 21. 2 |
| 27 | F. | 11. 12. 55. 48 | 11. 19. 56. 0 | 4. 37. 49 | 4. 50 38 |
| 28 | Sa. | 11. 26. 59. 54 | 0. 4. 6. 40 | 4. 59. 6 | 5. 3. 2 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declination at Noon. | ☽'s Declination at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | *Su.* | 5 | 3. 18 | 3. 14 | 9. 36 | 4. 13 S | 1. 31 S |
| 2 | M. | 6 | 4. 7 | 15. 59 | 22. 25 | 1. 14 N | 3. 59 N |
| 3 | Tu. | 7 | 4. 56 | 28. 54 | 35. 30 | 6. 41 | 9. 18 |
| 4 | W. | 8 | 5. 47 | 42. 12 | 49. 2 | 11. 49 | 14. 10 |
| 5 | Th. | 9 | 6. 41 | 56. 1 | 63. 10 | 16. 19 | 18. 15 |
| 6 | F. | 10 | 7. 38 | 70. 28 | 77. 55 | 19. 55 | 21. 16 |
| 7 | Sa. | 11 | 8. 37 | 85. 29 | 93. 8 | 22. 17 | 22. 58 |
| 8 | *Su.* | 12 | 9. 37 | 100. 49 | 108. 29 | 23. 15 | 23. 10 |
| 9 | M. | 13 | 10. 36 | 116. 5 | 123. 36 | 22. 44 | 21. 56 |
| 10 | Tu. | 14 | 11. 32 | 130. 57 | 138. 7 | 20. 49 | 19. 23 |
| 11 | W. | 15 | 12. 25 | 145. 5 | 151. 51 | 17. 42 | 15. 48 |
| 12 | Th. | 16 | 13. 14 | 158. 28 | 164. 47 | 13. 43 | 11. 29 |
| 13 | F. | 17 | 14. 0 | 170. 58 | 177. 1 | 9. 9 | 6. 44 |
| 14 | Sa. | 18 | 14. 45 | 182. 54 | 188. 42 | 4. 17 N | 1. 49 N |
| 15 | *Su.* | 19 | 15. 27 | 194. 25 | 200. 4 | 0. 39 S | 3. 4 S |
| 16 | M. | 20 | 16. 10 | 205. 41 | 211. 18 | 5. 27 | 7. 46 |
| 17 | Tu. | 21 | 16. 53 | 216. 56 | 222. 37 | 9. 59 | 12. 4 |
| 18 | W. | 22 | 17. 38 | 228. 21 | 234. 11 | 14. 3 | 15. 53 |
| 19 | Th. | 23 | 18. 24 | 240. 6 | 246. 8 | 17. 34 | 19. 4 |
| 20 | F. | 24 | 19. 11 | 252. 17 | 258. 35 | 20. 23 | 21. 28 |
| 21 | Sa. | 25 | 20. 0 | 265. 0 | 271. 31 | 22. 20 | 22. 56 |
| 22 | *Su.* | 26 | 20. 53 | 278. 9 | 284. 54 | 23. 16 | 23. 20 |
| 23 | M. | 27 | 21. 46 | 291. 42 | 298. 33 | 23. 6 | 22. 34 |
| 24 | Tu. | 28 | 22. 39 | 305. 26 | 312. 18 | 21. 44 | 20. 36 |
| 25 | W. | 29 | 23. 31 | 319. 9 | 325. 58 | 19. 11 | 17. 29 |
| 26 | Th. | 1 | ♂ | 332. 44 | 339. 26 | 15. 32 | 13. 22 |
| 27 | F. | 2 | 0. 22 | 346. 5 | 352. 40 | 10. 59 | 8. 27 |
| 28 | Sa. | 3 | 1. 13 | 359. 14 | 5. 47 | 5. 46 | 3. 0 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | *Su.* | 15. 58 | 16. 0 | 58. 35 | 58. 45 | 4875 | 4863 |
| 2 | M. | 16. 3 | 16. 5 | 58. 54 | 59. 1 | 4852 | 4843 |
| 3 | Tu. | 16. 7 | 16. 8 | 59. 8 | 59. 14 | 4834 | 4827 |
| 4 | W. | 16. 10 | 16. 11 | 59. 19 | 59. 23 | 4821 | 4816 |
| 5 | Th. | 16. 12 | 16. 12 | 59. 26 | 59. 27 | 4812 | 4811 |
| 6 | F. | 16. 12 | 16. 12 | 59. 28 | 59. 26 | 4810 | 4812 |
| 7 | Sa. | 16. 11 | 16. 10 | 59. 24 | 59. 19 | 4815 | 4821 |
| 8 | *Su.* | 16. 8 | 16. 6 | 59. 13 | 59. 5 | 4828 | 4838 |
| 9 | M. | 16. 3 | 16. 0 | 58. 54 | 58. 42 | 4852 | 4866 |
| 10 | Tu. | 15. 56 | 15. 52 | 58. 29 | 58. 13 | 4882 | 4902 |
| 11 | W. | 15. 47 | 15. 42 | 57. 56 | 57. 38 | 4923 | 4946 |
| 12 | Th. | 15. 37 | 15. 32 | 57. 19 | 57. 0 | 4970 | 4994 |
| 13 | F. | 15. 27 | 15. 21 | 56. 40 | 56. 20 | 5019 | 5045 |
| 14 | Sa. | 15. 16 | 15. 11 | 56. 1 | 55. 43 | 5069 | 5093 |
| 15 | *Su.* | 15. 6 | 15. 2 | 55. 25 | 55. 10 | 5116 | 5136 |
| 16 | M. | 14. 58 | 14. 55 | 54. 57 | 54. 45 | 5153 | 5169 |
| 17 | Tu. | 14. 53 | 14. 51 | 54. 36 | 54. 29 | 5181 | 5190 |
| 18 | W. | 14. 49 | 14. 49 | 54. 24 | 54. 23 | 5197 | 5198 |
| 19 | Th. | 14. 49 | 14. 50 | 54. 23 | 54. 27 | 5198 | 5193 |
| 20 | F. | 14. 52 | 14. 54 | 54. 32 | 54. 41 | 5186 | 5174 |
| 21 | Sa. | 14. 57 | 15. 1 | 54. 52 | 55. 6 | 5159 | 5141 |
| 22 | *Su.* | 15. 5 | 15. 10 | 55. 20 | 55. 38 | 5123 | 5099 |
| 23 | M. | 15. 15 | 15. 20 | 55. 57 | 56. 17 | 5075 | 5049 |
| 24 | Tu. | 15. 26 | 15. 32 | 56. 38 | 56. 59 | 5022 | 4995 |
| 25 | W. | 15. 38 | 15. 43 | 57. 21 | 57. 42 | 4967 | 4941 |
| 26 | Th. | 15. 49 | 15. 54 | 58. 2 | 58. 21 | 4916 | 4892 |
| 27 | F. | 15. 59 | 16. 3 | 58. 39 | 58. 55 | 4870 | 4850 |
| 28 | Sa. | 16. 7 | 16. 10 | 59. 8 | 59. 21 | 4834 | 4819 |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 65. 5. 51 | 63. 22. 21 | 61. 38. 44 | 59. 55. 0 |
| 2 | Aldebaran. | 51. 14. 40 | 49. 30. 18 | 47. 45. 51 | 46. 1. 19 |
| 3 | | 37. 17. 30 | 35. 32. 33 | 33. 47. 33 | 32. 2. 31 |
| 4 | | 23. 17. 3 | | | |
| 4 | | 67. 34. 37 | 65. 49. 19 | 64. 3. 59 | 62. 18. 36 |
| 5 | Pollux. | 53. 31. 17 | 51. 45. 47 | 50. 0. 17 | 48. 14. 48 |
| 6 | | 39. 27. 47 | | | |
| 6 | | 75. 6. 54 | 73. 20. 38 | 71. 34. 21 | 69. 48. 4 |
| 7 | | 60. 56. 51 | 59. 10. 42 | 57. 24. 36 | 55. 38. 33 |
| 8 | Regulus. | 46. 49. 23 | 45. 3. 49 | 43. 18. 23 | 41. 33. 5 |
| 9 | | 32. 48. 46 | 31. 4. 26 | 29. 20. 21 | 27. 36. 31 |
| 10 | | 19. 1. 58 | | | |
| 10 | | 73. 2. 45 | 71. 20. 6 | 69. 37. 38 | 67. 55. 25 |
| 11 | | 59. 28. 10 | 57. 47. 34 | 56. 7. 16 | 54. 27. 16 |
| 12 | Spica ♍ | 46. 12. 9 | 44. 34. 11 | 42. 56. 37 | 41. 19. 25 |
| 13 | | 33. 19. 34 | 31. 44. 58 | 30. 10. 57 | 28. 37. 32 |
| 14 | | 21. 0. 43 | | | |
| 14 | | 66. 19. 31 | 64. 45. 40 | 63. 12. 6 | 61. 38. 51 |
| 15 | Antares. | 53. 57. 2 | 52. 25. 34 | 50. 54. 23 | 49. 23. 30 |
| 16 | | 41. 53. 18 | 40. 24. 6 | 38. 55. 12 | 37. 26. 35 |
| 17 | | 30. 8. 19 | | | |
| 17 | | 79. 48. 16 | 78. 32. 4 | 77. 16. 6 | 76. 0. 23 |
| 18 | α Aquilæ. | 69. 45. 51 | 68. 31. 48 | 67. 18. 4 | 66. 4. 41 |
| 19 | | 60. 3. 5 | | | |
| 16 | | | 120. 41. 34 | 119. 18. 44 | 117. 56. 5 |
| 17 | | 111. 5. 18 | 109. 43. 33 | 108. 21. 54 | 107. 0. 22 |
| 18 | | 100. 14. 6 | 98. 53. 3 | 97. 32. 2 | 96. 11. 3 |
| 19 | The Sun. | 89. 26. 13 | 88. 5. 14 | 86. 44. 12 | 85. 23. 8 |
| 20 | | 78. 36. 40 | 77. 15. 6 | 75. 53. 25 | 74. 31. 37 |
| 21 | | 67. 40. 24 | 66. 17. 38 | 64. 54. 41 | 63. 31. 32 |
| 22 | | 56. 32. 38 | 55. 8. 11 | 53. 43. 29 | 52. 18. 32 |
| 23 | | 45. 9. 53 | 43. 43. 22 | 42. 16. 34 | 40. 49. 31 |
| 28 | Aldebaran. | 69. 21. 19 | 67. 35. 20 | 65. 49. 24 | 64. 3. 13 |
| M1 | | 55. 10. 24 | | | |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

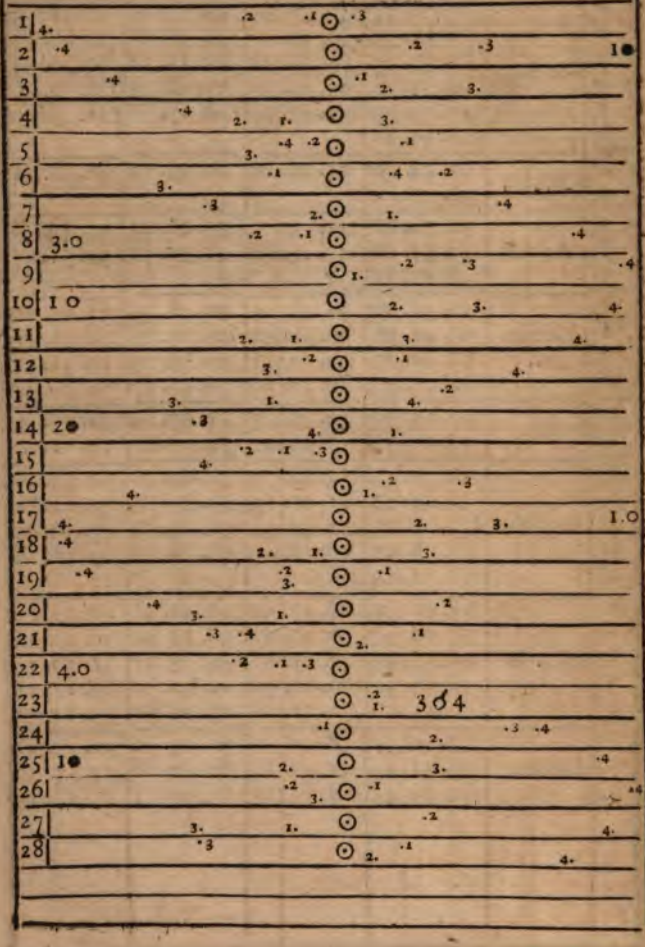
| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Aldebaran. | 58. 11. 9 | 56. 27. 11 | 54. 43. 7 | 52. 58. 57 |
| 2 | | 44. 16. 42 | 42. 32. 0 | 40. 47. 14 | 39. 2. 24 |
| 3 | | 30. 17. 27 | 28. 32. 22 | 26. 47. 16 | 25. 2. 9 |
| 4 | Pollux. | 60. 33. 11 | 58. 47. 44 | 57. 2. 16 | 55. 16. 47 |
| 5 | | 46. 29. 20 | 44. 43. 54 | 42. 58. 29 | 41. 13. 7 |
| 6 | Regulus. | 68. 1. 47 | 66. 15. 31 | 64. 29. 16 | 62. 43. 3 |
| 7 | | 53. 52. 33 | 52. 6. 38 | 50. 20. 48 | 48. 35. 3 |
| 8 | | 39. 47. 53 | 38. 2. 50 | 36. 17. 58 | 34. 33. 17 |
| 9 | | 25. 52. 56 | 24. 9. 40 | 22. 26. 45 | 20. 44. 10 |
| 10 | Spica ♍ | 66. 13. 27 | 64. 31. 44 | 62. 50. 16 | 61. 9. 5 |
| 11 | | 52. 47. 35 | 51. 8. 13 | 49. 29. 11 | 47. 50. 31 |
| 12 | | 39. 42. 34 | 38. 6. 8 | 36. 30. 9 | 34. 54. 38 |
| 13 | | 27. 4. 42 | 25. 32. 35 | 24. 1. 11 | 22. 30. 33 |
| 14 | Antares. | 60. 5. 53 | 58. 33. 14 | 57. 0. 52 | 55. 28. 48 |
| 15 | | 47. 52. 54 | 46. 22. 34 | 44. 52. 32 | 43. 22. 46 |
| 16 | | 35. 58. 17 | 34. 30. 18 | 33. 2. 38 | 31. 35. 19 |
| 17 | α Aquilæ. | 74. 44. 56 | 73. 29. 44 | 72. 14. 50 | 71. 0. 12 |
| 18 | | 64. 51. 36 | 63. 38. 56 | 62. 26. 36 | 61. 14. 40 |
| 16 | The Sun. | 116. 33. 37 | 115. 11. 19 | 113. 49. 11 | 112. 27. 10 |
| 17 | | 105. 38. 57 | 104. 17. 38 | 102. 56. 23 | 101. 35. 13 |
| 18 | | 94. 50. 5 | 93. 29. 8 | 92. 8. 10 | 90. 47. 12 |
| 19 | | 84. 2. 1 | 82. 40. 50 | 81. 19. 34 | 79. 58. 11 |
| 20 | | 73. 9. 41 | 71. 47. 36 | 70. 25. 22 | 69. 2. 58 |
| 21 | | 62. 8. 11 | 60. 44. 38 | 59. 20. 51 | 57. 56. 51 |
| 22 | | 50. 53. 20 | 49. 27. 52 | 48. 2. 8 | 46. 36. 8 |
| 23 | | 39. 22. 12 | | | |
| 28 | Aldebaran | 62. 16. 52 | 60. 30. 25 | 58. 43. 51 | 56. 57. 11 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 48. 38. 23 | 50. 14. 14 | 51. 50. 14 | 53. 26. 20 |
| 2 | | 61. 28. 40 | 63. 5. 34 | 64. 42. 28 | 66. 19. 29 |
| 3 | | 74. 26. 2 | 76. 3. 36 | 77. 41. 14 | 79. 18. 57 |
| 4 | | 87. 28. 39 | 89. 6. 48 | 90. 45. 0 | 92. 23. 16 |
| 5 | | 100. 35. 20 | 102. 13. 52 | 103. 52. 26 | 105. 31. 1 |
| 6 | | 113. 44. 26 | 115. 23. 9 | 117. 1. 50 | 118. 40. 31 |
| 4 | α Pegaſi. | 57. 11. 2 | 58. 43. 34 | 60. 16. 35 | 61. 50. 5 |
| 5 | | 69. 43. 22 | 71. 13. 58 | 72. 54. 48 | 74. 30. 51 |
| 6 | α Arietis. | 38. 56. 17 | 40. 54 7 | 42. 12. 33 | 43. 51. 33 |
| 7 | | 52. 12. 13 | 53. 53. 13 | 55. 34. 24 | 57. 15. 45 |
| 8 | Aldebaran. | 33. 39. 54 | 35. 25. 26 | 37. 10. 54 | 38. 56. 18 |
| 9 | | 47. 41. 53 | 49. 26. 39 | 51. 11. 16 | 52. 55. 44 |
| 10 | | 61. 35. 31 | 63. 18. 54 | 65. 2. 5 | 66. 45. 4 |
| 11 | | 75. 16. 28 | | | |
| 11 | Pollux. | 31. 22. 25 | 33. 2. 24 | 34. 42. 15 | 36. 21. 59 |
| 12 | | 44. 37. 50 | 46. 16. 23 | 47. 54. 42 | 49. 32. 46 |
| 13 | | 57. 39. 10 | | | |
| 13 | Regulus. | 21. 46. 16 | 23. 22. 14 | 24. 58. 1 | 26. 33. 35 |
| 14 | | 34. 28. 15 | 36. 2. 30 | 37. 36. 30 | 39. 10. 16 |
| 15 | | 46. 55. 23 | 48. 27. 40 | 49. 59. 43 | 51. 31. 33 |
| 16 | | 59. 7. 36 | 60. 38. 11 | 62. 8. 36 | 63. 38. 50 |
| 17 | | 71. 7. 37 | 72. 36. 58 | 74. 6. 13 | 75. 35. 21 |
| 18 | Spica ♍ | 29. 34. 25 | 31. 0. 34 | 32. 26. 54 | 33. 53. 24 |
| 19 | | 41. 7. 59 | 42. 35. 14 | 44. 2. 36 | 45. 30. 6 |
| 20 | | 52. 49. 35 | 54. 17. 55 | 55. 46. 24 | 57. 15. 3 |
| 21 | | 64. 40. 54 | 66. 10. 39 | 67. 40. 38 | 69. 10. 50 |
| 22 | | 76. 45. 26 | | | |
| 22 | Antares. | 31. 7. 45 | 32. 37. 33 | 34. 7. 48 | 35. 38. 29 |
| 23 | | 43. 18. 5 | 44. 51. 11 | 46. 24. 39 | 47. 58. 29 |
| 24 | | 55. 53. 21 | 57. 29. 24 | 59. 5. 49 | 60. 42. 35 |
| 25 | | 68. 51. 49 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 55. 2. 37 | 56. 38. 59 | 58. 15. 29 | 59. 52. 4 |
| 2 | | 67. 56. 35 | 69. 33. 49 | 71. 11. 8 | 72. 48. 32 |
| 3 | | 80. 56. 44 | 82. 34. 36 | 84. 12. 33 | 85. 50. 34 |
| 4 | | 94. 1. 36 | 95. 39. 58 | 97. 18. 23 | 98. 56. 50 |
| 5 | | 107. 9. 39 | 108. 48. 19 | 110. 27. 1 | 112. 5. 43 |
| 6 | | 120. 19. 11 | | | |
| 4 | α Pegasi. | 63. 24. 0 | 64. 58. 20 | 66. 33. 1 | 68. 8. 1 |
| 5 | | 76. 7. 4 | | | |
| 5 | α Arietis. | 32. 32. 26 | 34. 7. 9 | 35. 42. 44 | 37. 19. 8 |
| 6 | | 45. 31. 0 | 47. 10. 49 | 48. 50. 58 | 50. 31. 27 |
| 7 | | 58. 57. 12 | | | |
| 7 | Aldebaran. | 26. 37. 26 | 28. 23. 5 | 30. 8. 43 | 31. 54. 20 |
| 8 | | 40. 41. 38 | 42. 26. 52 | 44. 11. 59 | 45. 56. 59 |
| 9 | | 54. 40. 3 | 56. 24. 11 | 58. 8. 9 | 59. 51. 55 |
| 10 | | 68. 27. 49 | 70. 10. 20 | 71. 52. 37 | 73. 34. 40 |
| 11 | Pollux. | 38. 1. 30 | 39. 40. 53 | 41. 20. 4 | 42. 59. 3 |
| 12 | | 51. 10. 36 | 52. 48. 12 | 54. 25. 27 | 56. 2. 27 |
| 13 | Regulus. | 28. 8. 57 | 29. 44. 7 | 31. 19. 3 | 32. 53. 46 |
| 14 | | 40. 43. 47 | 42. 17. 3 | 43. 50. 4 | 45. 22. 51 |
| 15 | | 53. 3. 10 | 54. 34. 35 | 56. 5. 47 | 57. 36. 47 |
| 16 | | 65. 8. 54 | 66. 38. 47 | 68. 8. 32 | 69. 38. 9 |
| 17 | | 77. 4. 24 | | | |
| 17 | Spica ♍ | 23. 52. 5 | 25. 17. 18 | 26. 42. 46 | 28. 8. 29 |
| 18 | | 35. 20. 5 | 36. 46. 52 | 38. 13. 47 | 39. 40. 49 |
| 19 | | 46. 57. 43 | 48. 25. 28 | 49. 53. 22 | 51. 21. 24 |
| 20 | | 58. 43. 51 | 60. 12. 50 | 61. 42. 0 | 63. 11. 21 |
| 21 | | 70. 41. 16 | 72. 11. 56 | 73. 42. 51 | 75. 14. 1 |
| 22 | Antares. | 37. 9. 35 | 38. 41. 6 | 40. 13. 2 | 41. 45. 21 |
| 23 | | 49. 32. 43 | 51. 7. 19 | 52. 42. 18 | 54. 17. 38 |
| 24 | | 62. 19. 43 | 63. 57. 12 | 65. 35. 3 | 67. 13. 15 |

## Configurations of the SATELLITES of JUPITER at 9 o' th' Clock at Night.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | *Su.* | *Quinquageſ. or Shrove Su.* |
| 2 | M. | Chad. [David. |
| 3 | Tu. | |
| 4 | W. | *Aſh Wedneſday.* |
| 5 | Th. | *Princeſs of Heſſe born.* |
| 6 | F. | |
| 7 | Sa. | Perpetua. |
| 8 | *Su.* | *1ſt Sunday in Lent.* |
| 9 | M. | |
| 10 | Tu. | |
| 11 | W. | |
| 12 | Th. | Gregory M. |
| 13 | F. | |
| 14 | Sa. | |
| 15 | *Su.* | *2d Sunday in Lent.* |
| 16 | M. | |
| 17 | Tu. | |
| 18 | W. | Ed. K. of Weſt Saxons. |
| 19 | Th. | |
| 20 | F. | |
| 21 | Sa. | Benedict. |
| 22 | *Su.* | *3d Sunday in Lent.* |
| 23 | M. | |
| 24 | Tu. | |
| 25 | W. | Annuncia. of V. Mary. |
| 26 | Th. | |
| 27 | F. | |
| 28 | Sa. | |
| 29 | *Su.* | *4th Sunday in Lent. Mid-* |
| 30 | M. | [*Lent Sunday.* |
| 31 | Tu. | |

Phaſes of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter — | 5. | 12. | 5 |
| Full Moon — | 12. | 17. | 6 |
| Laſt Quarter— | 20. | 19. | 15 |
| New Moon — | 28. | 4. | 0 |

| D. | Other Phenomena. |
|---|---|
| 1. | ☾ ν ♓ 18h. 38′. |
| 4. | ☾ ε ♉ 18h. 43′. |
| 5. | ☾ ι ♉ 8h. 55′. |
| | ☾ ζ ♉ 22h. 34′. |
| 6. | ☾ n ☐ 13h. 29′. |
| | ☾ μ ♊ 16h. 42′. |
| 7. | ☾ ♌ ♊ 15h. 42′. |
| 8. | ☾ n ♋ 21h. 25′. |
| 10. | ☿ ι ♉ diff. Lat. 19′. |
| 17. | ☾ γ ♎ 12h. 44′. |
| | ☾ θ ♎ 22h. 19′. |
| | ☾ n ♎ 17h. 16′. |
| | ☾ 4 ad ζ ♉ 12h. 32′. |
| | ☿ ζ ♓ diff. Lat. 34′. |
| 19. | ☾ ρ Ophiuchi 14h. 28′. |
| 20. | ☉ enters γ at 0h. 10′. |
| 24. | ☾ γ ♍ 15h. 10′. |
| | ☾ ♌ ♍ 18h. 21′. |

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | *Su.* | 11. 11. 3. 55 | 22. 50. 7,7 | 7. 25. 29 | 12. 37,7 | 12,5 |
| 2 | M. | 11. 12. 4. 0 | 22. 53. 51,8 | 7. 2. 36 | 12. 25,2 | 13,0 |
| 3 | Tu. | 11. 13. 4. 4 | 22. 57. 35,3 | 6. 39. 37 | 12. 12,2 | 13,4 |
| 4 | W. | 11. 14. 4. 6 | 23. 1. 18,4 | 6. 16. 32 | 11. 58,8 | 13,9 |
| 5 | Th. | 11. 15. 4. 5 | 23. 5. 1,0 | 5. 53. 23 | 11. 44,9 | 14,4 |
| 6 | F. | 11. 16. 4. 2 | 23. 8. 43,2 | 5. 30. 9 | 11. 30,5 | 14,8 |
| 7 | Sa. | 11. 17. 3. 56 | 23. 12. 24,9 | 5. 6. 50 | 11. 15,7 | 15,2 |
| 8 | *Su.* | 11. 18. 3. 49 | 23. 16. 6,2 | 4. 43. 28 | 11. 0,5 | 15,6 |
| 9 | M. | 11. 19. 3. 39 | 23. 19. 47,1 | 4. 20. 3 | 10. 44,9 | 15,9 |
| 10 | Tu. | 11. 20. 3. 27 | 23. 23. 27,7 | 3. 56. 34 | 10. 29,0 | 16,3 |
| 11 | W. | 11. 21. 3. 12 | 23. 27. 7,8 | 3. 33. 3 | 10. 12,7 | 16,7 |
| 12 | Th. | 11. 22. 2. 56 | 23. 30. 47,8 | 3. 9. 28 | 9. 56,0 | 16,9 |
| 13 | F. | 11. 23. 2. 37 | 23. 34. 27,4 | 2. 45. 52 | 9. 39,1 | 17,1 |
| 14 | Sa. | 11. 24. 2. 17 | 23. 38. 6,7 | 2. 22. 14 | 9. 22,0 | 17,4 |
| 15 | *Su.* | 11. 25. 1. 54 | 23. 41. 45,8 | 1. 58. 35 | 9. 4,6 | 17,7 |
| 16 | M. | 11 26. 1. 30 | 23. 45. 24,7 | 1. 34. 55 | 8. 46,9 | 17,8 |
| 17 | Tu. | 11. 27. 1. 4 | 23. 49. 3,4 | 1. 11. 14 | 8. 29,1 | 18,0 |
| 18 | W. | 11. 28. 0. 36 | 23. 52. 41,9 | 0. 47. 32 | 8. 11,1 | 18,2 |
| 19 | Th. | 11. 29. 0. 6 | 23. 56. 20,2 | 0. 23. 51 | 7. 52,9 | 18,3 |
| 20 | F. | 11. 29. 59. 35 | 23. 59. 58,4 | 0. 0. 10 | 7. 34,6 | 18,4 |
| | | | | North. | | |
| 21 | Sa. | 0. 0. 59. 2 | 0. 3. 36,6 | 0. 23. 31 | 7. 16,2 | 18,4 |
| 22 | *Su.* | 0. 1. 58. 27 | 0. 7. 14,6 | 0. 47. 10 | 6. 57,8 | 18,5 |
| 23 | M. | 0. 2. 57. 50 | 0. 10. 52,6 | 1. 10. 47 | 6. 39,3 | 18,6 |
| 24 | Tu. | 0. 3. 57. 12 | 0. 14. 30,6 | 1. 34. 24 | 6. 20,7 | 18,6 |
| 25 | W. | 0. 4. 56. 32 | 0. 18. 8,5 | 1. 57. 58 | 6. 2,1 | 18,6 |
| 26 | Th. | 0. 5. 55. 50 | 0. 21. 46,3 | 2. 21. 30 | 5. 43,5 | 18,6 |
| 27 | F. | 0. 6. 55. 6 | 0. 25. 24,3 | 2. 44. 58 | 5. 24,9 | 18,6 |
| 28 | Sa. | 0. 7. 54. 21 | 0. 29. 2,2 | 3. 8. 24 | 5. 6,3 | 18,5 |
| 29 | *Su.* | 0. 8. 53. 33 | 0. 32. 40,2 | 3. 31. 46 | 4. 47,8 | 18,5 |
| 30 | M. | 0. 9. 52. 43 | 0. 36. 18,2 | 3. 55. 3 | 4. 29,3 | 18,5 |
| 31 | Tu. | 0. 10. 51. 50 | 0. 39. 56,2 | 4. 18. 16 | 4. 10,8 | |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 10,7 | 1. 5,3 | 2. 30,2 | 9. 996467 | 3. 5. 35 |
| 7 | 16. 9,2 | 1. 4,9 | 2. 29,7 | 9. 997139 | 3. 5. 16 |
| 13 | 16. 7,5 | 1. 4,6 | 2. 29,2 | 9. 997841 | 3. 4. 57 |
| 19 | 16. 5,9 | 1. 4,4 | 2. 28,8 | 9. 998593 | 3. 4. 38 |
| 25 | 16. 4,2 | 1. 4,3 | 2. 28,3 | 9. 999360 | 3. 4. 19 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Emerſions. | | II. Satellite. Emerſions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 2 | 17. 24. 16 | 4 | 5. 14. 13 | 5 | 7*58. 28 I. |
| 4 | 11*53. 17 | 7 | 18. 32. 50 | 5 | 11*29. 38 E. |
| 6 | 6. 22. 17 | 11 | 7*51. 40 | 12 | 11*59. 21 I. |
| 8 | 0. 51. 20 | 14 | 21. 10. 35 | 12 | 15*30. 14 E. |
| 9 | 19. 20. 22 | 18 | 10*29. 37 | 19 | 16. 0. 34 I. |
| 11 | 13*49. 26 | 21 | 23. 48. 45 | 19 | 19. 31. 8 E. |
| 13 | 8*18. 32 | 25 | 13* 7. 58 | 26 | 20. 1. 58 I. |
| 15 | 2. 47. 41 | 29 | 2. 27. 19 | 26 | 23. 32. 13 E. |
| 16 | 21. 16. 47 | | | | |
| 18 | 15*45. 57 | | | IV. Satellite. | |
| 20 | 10*15. 6 | | | | |
| 22 | 4. 44. 17 | | | 2 | 21. 35. 37 I. |
| 23 | 23. 13. 28 | | | 3 | 2. 18. 29 E. |
| 25 | 17. 42. 40 | | | 19 | 15*40. 19 I. |
| 27 | 12*11. 52 | | | 19 | 20. 21. 59 E. |
| 29 | 6. 41. 5 | | | | |
| 31 | 1. 10. 14 | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** | | | | | | |
| 1 | 7. 28. 37 | 1. 33 S | 10. 14. 13 | 0. 43 S | 17. 16 S | 22. 19 |
| 7 | 8. 15. 8 | 3. 26 | 10. 21. 36 | 1. 29 | 15. 43 | 22. 27 |
| 13 | 9. 1. 47 | 5. 2 | 10. 29. 58 | 2. 0 | 13. 22 | 22. 39 |
| 19 | 9. 19. 18 | 6. 15 | 11. 9. 10 | 2. 16 | 10. 15 | 22. 53 |
| 25 | 10. 8. 35 | 6. 56 | 11. 19. 9 | 2. 16 | 6. 23 | 23. 9 |
| **VENUS.** Sup. ♂ 23d. at 20h½. | | | | | | |
| 1 | 10. 27. 33 | 3. 14 S | 11. 5. 21 | 1. 23 S | 10. 51 S | 23. 42 |
| 7 | 11. 7. 3 | 3. 22 | 11. 12. 50 | 1. 26 | 8. 4 | 23. 47 |
| 13 | 11. 16. 34 | 3. 23 | 11. 20. 19 | 1. 26 | 5. 9 | 23. 53 |
| 19 | 11. 26. 6 | 3. 19 | 11. 27. 47 | 1. 24 | 2. 10 S | 23. 58 |
| 25 | 0. 5. 39 | 3. 10 | 0. 5. 14 | 1. 20 | 0. 51 N | 0. 3 |
| **MARS.** | | | | | | |
| 1 | 0. 20. 46 | 0. 51 S | 0. 4. 36 | 0. 32 S | 1. 20 N | 1. 27 |
| 7 | 0. 24. 20 | 0. 45 | 0. 9. 10 | 0. 28 | 3. 12 | 1. 22 |
| 13 | 0. 27. 52 | 0. 39 | 0. 13. 43 | 0. 24 | 5. 3 | 1. 17 |
| 19 | 1. 1. 23 | 0. 32 | 0. 18. 14 | 0. 20 | 6. 51 | 1. 12 |
| 25 | 1. 4. 51 | 0. 26 | 0. 22. 43 | 0. 16 | 8. 36 | 1. 7 |
| **JUPITER.** | | | | | | |
| 1 | 4. 23. 28 | 0. 56 N | 4. 19. 35 | 1. 8 N | 16. 2 N | 10. 38 |
| 7 | 4. 23. 56 | 0. 56 | 4. 18. 55 | 1. 8 | 16. 14 | 10. 13 |
| 13 | 4. 24. 24 | 0. 57 | 4. 18. 21 | 1. 7 | 16. 25 | 9. 48 |
| 19 | 4. 24. 52 | 0. 57 | 4. 17. 51 | 1. 7 | 16. 34 | 9. 24 |
| 25 | 4. 25. 20 | 0. 58 | 4. 17. 27 | 1. 7 | 16. 41 | 9. 1 |
| **SATURN.** | | | | | | |
| 1 | 7. 10. 6 | 2. 22 N | 7. 15. 18 | 2. 29 N | 14. 3 S | 16. 2 |
| 7 | 7. 10. 17 | 2. 22 | 7. 15. 11 | 2. 31 | 14. 0 | 15. 39 |
| 13 | 7. 10. 28 | 2. 22 | 7. 15. 1 | 2. 32 | 13. 56 | 15. 16 |
| 19 | 7. 10. 39 | 2. 22 | 7. 14. 49 | 2. 33 | 13. 52 | 14. 54 |
| 25 | 7. 10. 51 | 2. 22 | 7. 14. 33 | 2. 34 | 13. 46 | 14. 31 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | *Su.* | 0. 11. 15. 35 | 0. 18. 26. 2 | 5. 2. 14 S | 4.56.41 S |
| 2 | M. | 0. 25. 37. 10 | 1. 2. 48. 26 | 4. 46. 26 | 4.31.38 |
| 3 | Tu. | 1. 9. 59. 10 | 1. 17. 8. 55 | 4. 12. 35 | 3.49.34 |
| 4 | W. | 1. 24. 17. 14 | 2. 1. 23. 51 | 3. 23. 2 | 2.53.25 |
| 5 | Th. | 2. 8. 28. 29 | 2. 15. 31. 3 | 2. 21. 14 | 1.47. 5 |
| 6 | F. | 2. 22. 31. 25 | 2. 29. 29. 32 | 1. 11. 27 S | 0.34.57 S |
| 7 | Sa. | 3. 6. 25. 26 | 3. 13. 19. 2 | 0. 1. 52 N | 0.38.25 N |
| 8 | *Su.* | 3. 20. 10. 25 | 3. 26. 59. 31 | 1. 14. 12 | 1.48.39 |
| 9 | M. | 4. 3. 46. 19 | 4. 10. 30. 45 | 2. 21. 21 | 2.51.49 |
| 10 | Tu. | 4. 17. 12. 44 | 4. 23. 52. 7 | 3. 19. 40 | 3.44.34 |
| 11 | W. | 5. 0. 28. 51 | 5. 7. 2. 43 | 4. 6. 14 | 4.24.26 |
| 12 | Th. | 5. 13. 33. 35 | 5. 20. 1. 21 | 4. 39. 0 | 4.49.51 |
| 13 | F. | 5. 26. 25. 47 | 6. 2. 46. 54 | 4. 56. 56 | 5. 0.13 |
| 14 | Sa. | 6. 9. 4. 36 | 6. 15. 18. 52 | 4. 59. 49 | 4.55.47 |
| 15 | *Su.* | 6. 21. 29. 46 | 6. 27. 37. 26 | 4. 48. 19 | 4.37.32 |
| 16 | M. | 7. 3. 42. 3 | 7. 9. 43. 50 | 4. 23. 41 | 4. 6.56 |
| 17 | Tu. | 7. 15. 43. 10 | 7. 21. 40. 27 | 3. 47. 34 | 3.25.46 |
| 18 | W. | 7. 27. 36. 7 | 8. 3. 30. 44 | 3. 1. 50 | 2.35.57 |
| 19 | Th. | 8. 9. 24. 47 | 8. 15. 19. 5 | 2. 8. 26 | 1.39.29 |
| 20 | F. | 8. 21. 14. 5 | 8. 27. 10. 35 | 1. 9. 23 | 0.38.23 N |
| 21 | Sa. | 9. 3. 9. 11 | 9. 9. 10. 40 | 0. 6. 48 N | 0.25. 9 S |
| 22 | *Su.* | 9. 15. 15. 40 | 9. 21. 24. 54 | 0. 57. 3 S | 1.28.43 |
| 23 | M. | 9. 27. 38. 56 | 10. 3. 58. 24 | 1. 59. 42 | 2.29.36 |
| 24 | Tu. | 10. 10. 23. 45 | 10. 16. 55. 26 | 2. 58. 5 | 3.24.39 |
| 25 | W. | 10. 23. 33. 43 | 11. 0. 18. 43 | 3. 48. 51 | 4.10.19 |
| 26 | Th. | 11. 7. 10. 26 | 11. 14. 8. 44 | 4. 28. 31 | 4.42.58 |
| 27 | F. | 11. 21. 13. 8 | 11. 28. 23. 10 | 4. 53. 20 | 4.59.13 |
| 28 | Sa. | 0. 5. 38. 1 | 0. 12. 56. 52 | 5 0. 24 | 4.56.39 |
| 29 | *Su.* | 0. 20. 18. 41 | 0. 27. 42. 22 | 4. 47. 58 | 4.34.26 |
| 30 | M. | 1. 5. 6. 50 | 1. 12. 31. 5 | 4. 16. 14 | 3.53.42 |
| 31 | Tu. | 1. 19. 54. 6 | 1. 27. 15. 1 | 3. 27. 18 | 2.57.31 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | *Su.* | 4 | 2. 3 | 12. 19 | 18. 53 | 0. 11 S | 2. 39 N |
| 2 | M. | 5 | 2. 54 | 25. 29 | 32. 10 | 5. 28 N | 8. 12 |
| 3 | Tu. | 6 | 3. 46 | 38. 55 | 45. 47 | 10. 50 | 13. 18 |
| 4 | W. | 7 | 4. 40 | 52. 46 | 59. 53 | 15. 35 | 17. 38 |
| 5 | Th. | 8 | 5. 36 | 67. 8 | 74. 29 | 19. 25 | 20. 54 |
| 6 | F. | 9 | 6. 34 | 81. 56 | 89. 27 | 22. 4 | 22. 53 |
| 7 | Sa. | 10 | 7. 33 | 97. 0 | 104. 32 | 23. 20 | 23. 26 |
| 8 | *Su.* | 11 | 8. 32 | 112. 2 | 119. 25 | 23. 10 | 22. 33 |
| 9 | M. | 12 | 9. 28 | 126. 41 | 133. 48 | 21. 37 | 20. 23 |
| 10 | Tu. | 13 | 10. 21 | 140. 44 | 147. 29 | 18. 52 | 17. 6 |
| 11 | W. | 14 | 11. 11 | 154. 3 | 160. 27 | 15. 9 | 13. 1 |
| 12 | Th. | 15 | 11. 58 | 166. 40 | 172. 45 | 10. 46 | 8. 24 |
| 13 | F. | 16 | 12. 43 | 178. 42 | 184. 33 | 5. 58 | 3. 29 N |
| 14 | Sa. | 17 | 13. 27 | 190. 18 | 196. 0 | 1. 0 N | 1. 29 S |
| 15 | *Su.* | 18 | 14. 9 | 201. 40 | 207. 19 | 3. 56 S | 6. 19 |
| 16 | M. | 19 | 14. 52 | 212. 58 | 218. 39 | 8. 38 | 10. 50 |
| 17 | Tu. | 20 | 15. 36 | 224. 22 | 230. 10 | 12. 56 | 14. 53 |
| 18 | W. | 21 | 16. 22 | 236. 2 | 242. 0 | 16. 42 | 18. 20 |
| 19 | Th. | 22 | 17. 9 | 248. 4 | 254. 15 | 19. 46 | 21. 0 |
| 20 | F. | 23 | 17. 58 | 260. 33 | 266. 56 | 22. 1 | 22. 48 |
| 21 | Sa. | 24 | 18. 49 | 273. 26 | 280. 1 | 23. 19 | 23. 34 |
| 22 | *Su.* | 25 | 19. 41 | 286. 41 | 293. 24 | 23. 32 | 23. 13 |
| 23 | M. | 26 | 20. 33 | 300. 9 | 306. 56 | 22. 36 | 21. 42 |
| 24 | Tu. | 27 | 21. 25 | 313. 42 | 320. 28 | 20. 30 | 19. 2 |
| 25 | W. | 28 | 22. 17 | 327. 12 | 333. 55 | 17. 17 | 15. 16 |
| 26 | Th. | 29 | 23. 8 | 340. 36 | 347. 15 | 13. 2 | 10. 36 |
| 27 | F. | 30 | 23. 59 | 353. 53 | 0. 31 | 7. 59 | 5. 13 S |
| 28 | Sa. | 1 | ♂ | 7. 9 | 13. 50 | 2. 21 S | 0. 34 N |
| 29 | *Su.* | 2 | 0. 51 | 20. 34 | 27. 22 | 3. 30 N | 6. 24 |
| 30 | M. | 3 | 1. 45 | 34. 15 | 41. 16 | 9. 13 | 11. 54 |
| 31 | Tu. | 4 | 2. 40 | 48. 24 | 55. 40 | 14. 24 | 16. 41 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | *Su.* | 16. 13 | 16. 14 | 59. 29 | 59. 35 | 4809 | 4801 |
| 2 | M. | 16. 16 | 16. 16 | 59. 40 | 59. 41 | 4795 | 4794 |
| 3 | Tu. | 16. 16 | 16. 15 | 59. 41 | 59. 39 | 4794 | 4797 |
| 4 | W. | 16. 14 | 16. 13 | 59. 35 | 59. 30 | 4801 | 4808 |
| 5 | Th. | 16. 11 | 16. 9 | 59. 24 | 59. 16 | 4815 | 4824 |
| 6 | F. | 16. 7 | 16. 4 | 59. 7 | 58. 58 | 4835 | 4846 |
| 7 | Sa. | 16. 1 | 15. 58 | 58. 48 | 58. 37 | 4859 | 4872 |
| 8 | *Su.* | 15. 55 | 15. 52 | 58. 25 | 58. 13 | 4887 | 4902 |
| 9 | M. | 15. 48 | 15. 45 | 58. 0 | 57. 47 | 4918 | 4934 |
| 10 | Tu. | 15. 41 | 15. 37 | 57. 33 | 57. 19 | 4952 | 4970 |
| 11 | W. | 15. 33 | 15. 29 | 57. 4 | 56. 49 | 4989 | 5008 |
| 12 | Th. | 15. 24 | 15. 20 | 56. 33 | 56. 18 | 5028 | 5048 |
| 13 | F. | 15. 16 | 15. 12 | 56. 2 | 55. 48 | 5068 | 5086 |
| 14 | Sa. | 15. 8 | 15. 4 | 55. 33 | 55. 19 | 5106 | 5124 |
| 15 | *Su.* | 15. 1 | 14. 57 | 55. 6 | 54. 54 | 5141 | 5157 |
| 16 | M. | 14. 55 | 14. 52 | 54. 44 | 54. 35 | 5170 | 5182 |
| 17 | Tu. | 14. 49 | 14. 49 | 54. 28 | 54. 23 | 5191 | 5198 |
| 18 | W. | 14. 48 | 14. 48 | 54. 20 | 54. 19 | 5202 | 5203 |
| 19 | Th. | 14. 48 | 14. 49 | 54. 20 | 54. 24 | 5202 | 5197 |
| 20 | F. | 14. 51 | 14. 54 | 54. 30 | 54. 40 | 5189 | 5175 |
| 21 | Sa. | 14. 57 | 15. 1 | 54. 52 | 55. 6 | 5159 | 5141 |
| 22 | *Su.* | 15. 5 | 15. 10 | 55. 22 | 55. 41 | 5120 | 5095 |
| 23 | M. | 15. 17 | 15. 22 | 56. 2 | 56. 25 | 5068 | 5038 |
| 24 | Tu. | 15. 29 | 15. 36 | 56. 49 | 57. 15 | 5008 | 4975 |
| 25 | W. | 15. 43 | 15. 50 | 57. 40 | 58. 6 | 4943 | 4911 |
| 26 | Th. | 15. 57 | 16. 4 | 58. 32 | 58. 56 | 4878 | 4849 |
| 27 | F. | 16. 10 | 16. 15 | 59. 19 | 59. 39 | 4821 | 4797 |
| 28 | Sa. | 16. 20 | 16. 24 | 59. 57 | 60. 11 | 4775 | 4758 |
| 29 | *Su.* | 16. 27 | 16. 29 | 60. 22 | 60. 30 | 4745 | 4735 |
| 30 | M. | 16. 30 | 16. 30 | 60. 34 | 60. 33 | 4730 | 4732 |
| 31 | Tu. | 16. 29 | 16. 27 | 60. 30 | 60. 23 | 4735 | 4741 |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | Aldebaran. | 55. 10. 23 | 53. 23. 31 | 51. 36. 34 | 49. 49. 33 |
| 2 | | 40. 53. 58 | 39. 6. 48 | 37. 19. 40 | 35. 32. 33 |
| 3 | | 26. 37. 53 | | | |
| 3 | Pollux. | 70. 53. 8 | 69. 6. 18 | 67. 19. 29 | 65. 32. 45 |
| 4 | | 56. 40. 20 | 54. 54. 8 | 53. 8. 4 | 51. 22. 8 |
| 5 | | 42. 34. 33 | 40. 49. 32 | 39. 4. 43 | 37. 20. 6 |
| 6 | | 28. 40. 44 | | | |
| 6 | Regulus. | 64. 14. 31 | 62. 29. 39 | 60. 44. 56 | 59. 0. 20 |
| 7 | | 50. 19. 32 | 48. 35. 51 | 46. 52. 19 | 45. 8. 57 |
| 8 | | 36. 34. 42 | 34. 52. 24 | 33. 10. 19 | 31. 28. 27 |
| 9 | | 23. 2. 46 | | | |
| 9 | Spica ♍ | 77. 4. 54 | 75. 24. 8 | 73. 43. 33 | 72. 3. 9 |
| 10 | | 63. 44. 2 | 62. 4. 49 | 60. 25. 49 | 58. 47. 2 |
| 11 | | 50. 36. 29 | 48. 59. 5 | 47. 21. 58 | 45. 45. 7 |
| 12 | | 37. 45. 14 | 36. 10. 11 | 34. 35. 31 | 33. 1. 15 |
| 13 | | 25. 16. 46 | | | |
| 13 | Antares. | 70. 47. 24 | 69. 12. 57 | 67. 38. 43 | 66. 4. 43 |
| 14 | | 58. 18. 16 | 56. 45. 41 | 55. 13. 21 | 53. 41. 15 |
| 15 | | 46. 4. 29 | 44. 33. 53 | 43. 3. 32 | 41. 33. 27 |
| 16 | | 34. 7. 11 | 32. 38. 48 | 31. 10. 48 | 29. 43. 9 |
| 17 | | 22. 31. 23 | | | |
| 17 | β Capricorni. | 74. 59. 22 | 73. 30. 36 | 72. 1. 56 | 70. 33. 23 |
| 18 | | 63. 12. 3 | 61. 44. 1 | 60. 16. 3 | 58. 48. 8 |
| 19 | | 51. 29. 19 | | | |
| 19 | Fomalhaut. | 82. 41. 1 | 81. 16. 10 | 79. 51. 19 | 78. 26. 27 |
| 20 | | 71. 21. 59 | 69. 57. 3 | 68. 32. 6 | 67. 7. 8 |
| 21 | | 60. 1. 54 | | | |
| 18 | The Sun. | 120. 21. 39 | 119. 0. 41 | 117. 39. 45 | 116. 18. 51 |
| 19 | | 109. 34. 26 | 108. 13. 30 | 106. 52. 30 | 105. 31. 28 |
| 20 | | 98. 45. 23 | 97. 23. 53 | 96. 2. 17 | 94. 40. 33 |
| 21 | | 87. 49. 51 | 86. 27. 12 | 85. 4. 22 | 83. 41. 19 |
| 22 | | 76. 42. 54 | 75. 18. 29 | 73. 53. 48 | 72. 28. 51 |
| 23 | | 65. 19. 52 | 63. 53. 9 | 62. 26. 6 | 60. 58. 44 |
| 24 | | 53. 36. 52 | 52. 7. 26 | 50. 37. 39 | 49. 7. 30 |
| 25 | | 41. 31. 27 | | | |
| 30 | Pollux. | 75. 42. 4 | 73. 51. 37 | 72. 1. 10 | 70. 10. 46 |
| 31 | | 60. 59. 44 | 59. 9. 50 | 57. 20. 5 | 55. 30. 30 |
| A. 1 | | 46. 25. 12 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Aldebaran. | 48. 2. 29 | 46. 15. 23 | 44. 28. 16 | 42. 41. 8 |
| 2 | | 33. 45. 28 | 31. 58. 27 | 30. 11. 29 | 28. 24. 38 |
| 3 | Pollux. | 63. 46. 5 | 61. 59. 30 | 60. 13. 1 | 58. 26. 38 |
| 4 | | 49. 36. 19 | 47. 50. 38 | 46. 5. 6 | 44. 19. 45 |
| 5 | | 35. 35. 43 | 33. 51. 34 | 32. 7. 42 | 30. 24. 5 |
| 6 | Regulus. | 57. 15. 52 | 55. 31. 33 | 53. 47. 24 | 52. 3. 23 |
| 7 | | 43. 25. 45 | 41. 42. 43 | 39. 59. 51 | 38. 17. 11 |
| 8 | | 29. 46. 48 | 28. 5. 25 | 26. 24. 16 | 24. 43. 24 |
| 9 | Spica ♍ | 70. 22. 56 | 68. 42. 54 | 67. 3. 5 | 65. 23. 27 |
| 10 | | 57. 8. 28 | 55. 30. 7 | 53. 52. 0 | 52. 14. 7 |
| 11 | | 44. 8. 33 | 42. 32. 15 | 40. 56. 16 | 39. 20. 35 |
| 12 | | 31. 27. 23 | 29. 53. 59 | 28. 21. 4 | 26. 48. 39 |
| 13 | Antares. | 64. 30. 57 | 62. 57. 25 | 61. 24. 8 | 59. 51. 5 |
| 14 | | 52. 9. 24 | 50. 37. 48 | 49. 6. 26 | 47. 35. 20 |
| 15 | | 40. 3. 38 | 38. 34. 4 | 37. 4. 48 | 35. 35. 51 |
| 16 | | 28. 15. 53 | 26. 49. 5 | 25. 22. 41 | 23. 56. 47 |
| 17 | β Capricorni. | 69. 4. 56 | 67. 36. 35 | 66. 8. 19 | 64. 40. 9 |
| 18 | | 57. 20. 17 | 55. 52. 29 | 54. 24. 43 | 52. 57. 0 |
| 19 | Fomalhaut. | 77. 1. 35 | 75. 36. 43 | 74. 11. 50 | 72. 46. 55 |
| 20 | | 65. 42. 8 | 64. 17. 7 | 62. 52. 4 | 61. 27. 0 |
| 18 | The Sun. | 114. 57. 58 | 113. 37. 6 | 112. 16. 13 | 110. 55. 20 |
| 19 | | 104. 10. 23 | 102. 49. 15 | 101. 28. 3 | 100. 6. 45 |
| 20 | | 93. 18. 42 | 91. 56. 44 | 90. 34. 36 | 89. 12. 19 |
| 21 | | 82. 18. 5 | 80. 54. 38 | 79. 30. 57 | 78. 7. 3 |
| 22 | | 71. 3. 38 | 69. 38. 8 | 68. 12. 21 | 66. 46. 15 |
| 23 | | 59. 31. 2 | 58. 3. 0 | 56. 34. 38 | 55. 5. 55 |
| 24 | | 47. 37. 0 | 46. 6. 9 | 44. 34. 56 | 43. 3. 22 |
| 29 | Pollux. | 83. 3. 42 | 81. 13. 20 | 79. 22. 57 | 77. 32. 31 |
| 30 | | 68. 20. 24 | 66. 30. 6 | 64. 39. 53 | 62. 49. 46 |
| 31 | | 53. 41. 3 | 51. 51. 47 | 50. 2. 44 | 48. 13. 52 |

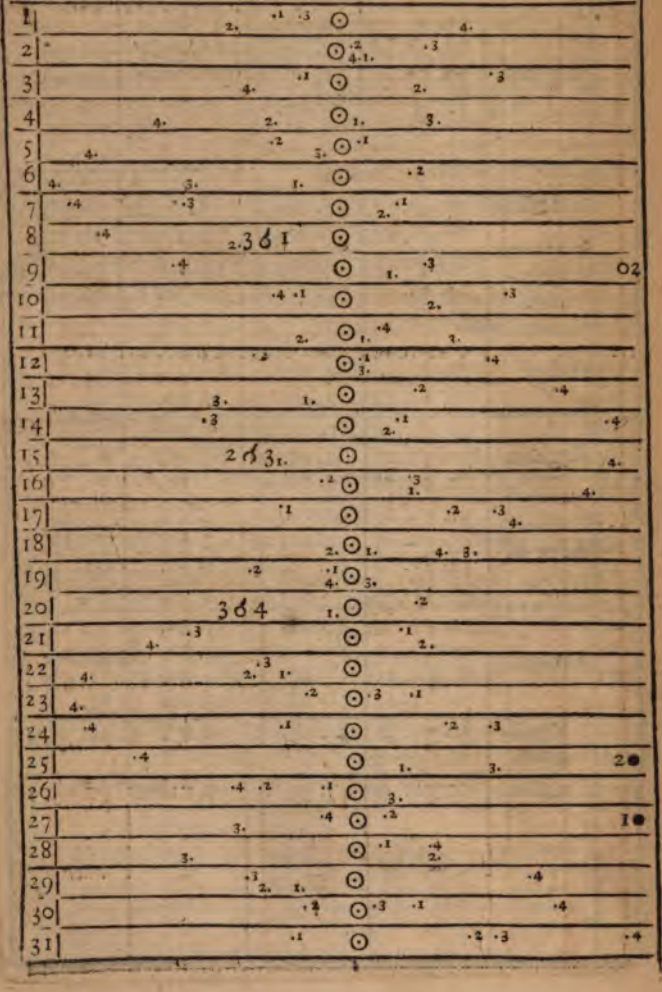
Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 2 | | 43. 45. 42 | 45. 25. 3 | 47. 4. 26 | 48. 43. 51 |
| 3 | | 57. 1. 8 | 58. 40. 33 | 60. 19. 56 | 61. 59. 17 |
| 4 | | 70. 15. 17 | 71. 54. 17 | 73. 33. 12 | 75. 12. 2 |
| 5 | The Sun. | 83. 24. 45 | 85. 3. 0 | 86. 41. 6 | 88. 19. 6 |
| 6 | | 96. 27. 18 | 98. 4. 33 | 99. 41. 41 | 101. 18. 40 |
| 7 | | 109. 21. 30 | 110. 57. 36 | 112. 33. 35 | 114. 9. 23 |
| 8 | | 122. 6. 6 | | | |
| 6 | | 49. 1. 41 | 50. 41. 4 | 52. 20. 35 | 54. 0. 15 |
| 7 | α Arietis. | 62. 19. 31 | 63. 59. 24 | 65. 39. 16 | 67. 19. 7 |
| 8 | | 75. 37. 28 | | | |
| 8 | | 43. 56. 59 | 45. 39. 32 | 47. 21. 57 | 49. 4. 13 |
| 9 | Aldeba- | 57. 33. 20 | 59. 14. 41 | 60. 55. 53 | 62. 36. 54 |
| 10 | ran. | 70. 59. 28 | 72. 39. 27 | 74. 19. 14 | 75. 58. 51 |
| 11 | | 84. 14. 16 | | | |
| 11 | | 40. 12. 55 | 41. 50. 30 | 43. 27. 57 | 45. 5. 15 |
| 12 | Pollux. | 53. 9. 22 | 54. 45. 41 | 56. 21. 48 | 57. 57. 44 |
| 13 | | 65. 54. 27 | 67. 29. 12 | 69. 3. 45 | 70. 38. 5 |
| 14 | | 78. 26. 45 | | | |
| 14 | | 42. 30. 35 | 44. 3. 45 | 45. 36. 44 | 47. 9. 31 |
| 15 | Regulus. | 54. 50. 39 | 56. 22. 19 | 57. 53. 49 | 59. 25. 8 |
| 16 | | 66. 59. 12 | 68. 29. 31 | 69. 59. 42 | 71. 29. 44 |
| 17 | | 78. 57. 54 | | | |
| 17 | | 25. 37. 43 | 27. 3. 55 | 28. 30. 17 | 29. 56. 47 |
| 18 | | 37. 11. 12 | 38. 38. 20 | 40. 5. 31 | 41. 32. 47 |
| 19 | Spica ♍ | 48. 49. 58 | 50. 17. 37 | 51. 45. 21 | 53. 13. 9 |
| 20 | | 60. 33. 36 | 62. 2. 3 | 63. 30. 37 | 64. 59. 20 |
| 21 | | 72. 25. 13 | | | |
| 21 | | 26. 51. 58 | 28. 19. 22 | 29. 47. 11 | 31. 15. 25 |
| 22 | | 38. 42. 36 | 40. 13. 10 | 41. 44. 5 | 43. 15. 23 |
| 23 | Antares. | 50. 57. 15 | 52. 30. 44 | 54. 4. 35 | 55. 38. 49 |
| 24 | | 63. 35. 43 | 65. 12. 17 | 66. 49. 14 | 68. 26. 36 |
| 25 | | 76. 39. 29 | | | |
| 25 | β Capri- | 24. 7. 5 | 25. 43. 35 | 27. 20. 51 | 28. 58. 53 |
| 26 | corni. | 37. 18. 58 | 39. 0. 45 | 40. 43. 3 | 42. 25. 50 |
| 31 | The Sun. | 39. 9. 58 | 40. 52. 6 | 42. 34. 9 | 44. 16. 9 |
| A. 1 | | 52. 44. 34 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | | | 38. 48. 7 | 40. 27. 13 | 42. 6. 25 |
| 2 | | 50. 23. 19 | 52. 2. 46 | 53. 42. 13 | 55. 21. 41 |
| 3 | | 63. 38. 38 | 65. 17. 53 | 66. 57. 5 | 68. 36. 13 |
| 4 | The Sun. | 76. 50. 47 | 78. 29. 25 | 80. 7. 58 | 81. 46. 25 |
| 5 | | 89. 56. 59 | 91. 34. 45 | 93. 12. 24 | 94. 49. 55 |
| 6 | | 102. 55. 31 | 104. 32. 14 | 106. 8. 48 | 107. 45. 13 |
| 7 | | 115. 45. 3 | 117. 20. 33 | 118. 55. 53 | 120. 31. 5 |
| 5 | | 42. 26. 21 | 44. 4. 50 | 45. 43. 34 | 47. 22. 30 |
| 6 | ♈ Arietis. | 55. 40. 1 | 57. 19. 50 | 58. 59. 42 | 60. 39. 34 |
| 7 | | 68. 58. 55 | 70. 38. 38 | 72. 18. 17 | 73. 57. 54 |
| 8 | | 50. 46. 20 | 52. 28. 19 | 54. 10. 8 | 55. 51. 49 |
| 9 | Aldebaran. | 64. 17. 46 | 65. 58. 28 | 67. 38. 58 | 69. 19. 19 |
| 10 | | 77. 38. 17 | 79. 17. 31 | 80. 56. 37 | 82. 35. 32 |
| 11 | | 46. 42. 24 | 48. 19. 23 | 49. 56. 13 | 51. 32. 52 |
| 12 | Pollux. | 59. 33. 29 | 61. 9. 1 | 62. 44. 22 | 64. 19. 30 |
| 13 | | 72. 12. 14 | 73. 46. 10 | 75. 19. 54 | 76. 53. 26 |
| 14 | | 48. 42. 7 | 50. 14. 31 | 51. 46. 45 | 53. 18. 47 |
| 15 | Regulus. | 60. 56. 17 | 62. 27. 16 | 63. 58. 4 | 65. 28. 43 |
| 16 | | 72. 59. 37 | 74. 29. 22 | 75. 59. 0 | 77. 28. 31 |
| 17 | | 31. 23. 27 | 32. 50. 14 | 34. 17. 7 | 35. 44. 7 |
| 18 | Spica ♍ | 43. 0. 7 | 44. 27. 28 | 45. 54. 54 | 47. 22. 23 |
| 19 | | 54. 41. 4 | 56. 9. 3 | 57. 37. 9 | 59. 5. 20 |
| 20 | | 66. 28. 12 | 67. 57. 11 | 69. 26. 21 | 70. 55. 42 |
| 21 | | 32. 44. 4 | 34. 13. 7 | 35. 42. 34 | 37. 12. 23 |
| 22 | Antares. | 44. 47. 2 | 46 19. 2 | 47. 51. 24 | 49. 24. 9 |
| 23 | | 57. 13. 25 | 58. 48. 24 | 60. 23. 47 | 61. 59. 33 |
| 24 | | 70. 4. 22 | 71. 42. 32 | 73. 21. 6 | 75. 0. 6 |
| 25 | ♑ Capricorni. | 30. 37. 36 | 32. 17. 1 | 33. 57. 3 | 35. 37. 43 |
| 26 | | 44. 9. 4 | | | |
| 31 | The Sun. | 45. 58. 4 | 47. 39. 53 | 49. 21. 34 | 51. 3. 8 |

Configurations of the SATELLITES of JUPITER at 10 o' th' Clock in the Evening.



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | W. | |
| 2 | Th. | |
| 3 | F. | Rich. Bp. Chich. |
| 4 | Sa. | St. Ambroſe. |
| 5 | *Su.* | *5th Sunday in Lent.* |
| 6 | M. | |
| 7 | Tu. | |
| 8 | W. | |
| 9 | Th. | |
| 10 | F. | Camb. Term ends. |
| 11 | Sa. | Oxford Term ends. |
| 12 | *Su.* | *6th Sunday in Lent. Palm* |
| 13 | M. | [*Sunday.* |
| 14 | Tu. | |
| 15 | W. | |
| 16 | Th. | |
| 17 | F. | *Good-Friday.* |
| 18 | Sa. | |
| 19 | *Su.* | *Eaſter-Day.* Alphege. |
| 20 | M. | *Eaſter-Monday.* |
| 21 | Tu. | *Eaſter-Tueſday.* |
| 22 | W. | |
| 23 | Th. | *St. George.* |
| 24 | F. | |
| 25 | Sa. | *St. Mark.* |
| 26 | *Su.* | *1ſt Su. after Eaſter. Low* |
| 27 | M. | [*Sunday.* |
| 28 | Tu. | |
| 29 | W. | Oxf. and Camb. Terms |
| 30 | Th. | [begin. |

## Phaſes of the Moon.

| | D. H. M. |
|---|---|
| First Quarter — | 3. 19. 50 |
| Full Moon — | 11. 8. 21 |
| Laſt Quarter — | 19. 12. 54 |
| New Moon — | 26. 12. 59 |

## Other Phenomena.

1. ☾ ☌ ♉ 1ʰ. 20′.
2. ☾ ☍ ♉ 4ʰ. 34′.
   ☾ ☌ ♊ 19ʰ. 5′.
   ☾ ☌ ♊ 22ʰ. 23′.
3. ☿ ☍ ♓ diff. Lat. 56′.
5. ☾ ☌ ♋ 6ʰ. 49′.
6. ☾ ☌ ♌ 19ʰ. 44′.
8. ☾ ☌ ♍ 20ʰ. 40′.
13. ☾ 4 ☍ ♎ 19ʰ. 57′.
    ☾ ☌ ♎ 20ʰ. 7′.
14. ☾ ☌ ♎ 5ʰ. 43′.
    ☾ ☌ ♏ Im. 14ʰ. 37′½.
    * 4′½ S. of ☽'s cent.
    Em. 16ʰ. 0′. * in par.
    of ☽'s center.
16. ☿ ☌ ☿ diff. Lat. 59′.
19. ☉ enters ♉ at 13ʰ. 2′.
20. ☾ ☍ Ophiuchi 11ʰ. 9′.
21. ☾ ☌ ♑ 0ʰ. 25′.
    ☾ ☌ ♒ 3ʰ. 39′.
23. ☿ ☌ ♈ diff. Lat. 18′.
28. ☾ ☍ ♉ 10ʰ. 21′.
    ☾ ☌ ♉ 11ʰ. 44′.
    ♂ ☿ diff. Lat. 24′.
30. ☾ ☌ ♊ 2ʰ. 51′.
    ☾ ☌ ♊ 5ʰ. 55′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | W. | 0. 11. 50. 56 | 0. 43. 34,3 | 4. 41. 24 | 3. 52,6 | 18,3 |
| 2 | Th. | 0. 12. 49. 59 | 0. 47. 12,6 | 5. 4. 28 | 3. 34,2 | 18,1 |
| 3 | F. | 0. 13. 49. 0 | 0. 50. 51,0 | 5. 27. 26 | 3. 16,1 | 18,0 |
| 4 | Sa. | 0. 14. 47. 58 | 0. 54. 29,5 | 5. 50. 18 | 2. 58,1 | 17,8 |
| 5 | *Su.* | 0. 15. 46. 54 | 0. 58. 8,1 | 6. 13. 4 | 2. 40,3 | 17,7 |
| 6 | M: | 0. 16. 45. 48 | 1. 1. 46,9 | 6. 35. 44 | 2. 22,6 | 17,6 |
| 7 | Tu. | 0. 17. 44. 39 | 1. 5. 26,0 | 6. 58. 16 | 2. 5,0 | 17,3 |
| 8 | W. | 0. 18. 43. 28 | 1. 9. 5,2 | 7. 20. 41 | 1. 47,7 | 17,0 |
| 9 | Th. | 0. 19. 42. 15 | 1. 12. 44,6 | 7. 42. 59 | 1. 30,7 | 16,8 |
| 10 | F. | 0. 20. 40. 59 | 1. 16. 24,3 | 8. 5. 9 | 1. 13,9 | 16,6 |
| 11 | Sa. | 0. 21. 39. 41 | 1. 20. 4,2 | 8. 27. 10 | 0. 57,3 | 16,3 |
| 12 | *Su.* | 0. 22. 38. 22 | 1. 23. 44,5 | 8. 49. 4 | 0. 41,0 | 15,9 |
| 13 | M. | 0. 23. 37. 1 | 1. 27. 25,1 | 9. 10. 49 | 0. 25,1 | 15,6 |
| 14 | Tu. | 0. 24. 35. 37 | 1. 31. 6,0 | 9. 32. 25 | 0. 9,5 | 15,3 |
| 15 | W. | 0. 25. 34. 12 | 1. 34. 47,2 | 9. 53. 51 | Sub. 5,8 | 14,9 |
| 16 | Th. | 0. 26. 32. 46 | 1. 38. 28,8 | 10. 15. 8 | 0. 20,7 | 14,5 |
| 17 | F. | 0. 27. 31. 18 | 1. 42. 10,9 | 10. 36. 14 | 0. 35,2 | 14,0 |
| 18 | Sa. | 0. 28. 29. 47 | 1. 45. 53,3 | 10. 57. 10 | 0. 49,2 | 13,6 |
| 19 | *Su.* | 0. 29. 28. 16 | 1. 49. 36,1 | 11. 17. 56 | 1. 2,8 | 13,3 |
| 20 | M. | 1. 0. 26. 43 | 1. 53. 19,4 | 11. 38. 31 | 1. 16,1 | 12,8 |
| 21 | Tu. | 1. 1. 25. 9 | 1. 57. 3,2 | 11. 58. 54 | 1. 28,9 | 12,3 |
| 22 | W. | 1. 2. 23. 33 | 2. 0. 47,4 | 12. 19. 6 | 1. 41,2 | 11,8 |
| 23 | Th. | 1. 3. 21. 55 | 2. 4. 32,1 | 12. 39. 5 | 1. 53,0 | 11,4 |
| 24 | F. | 1. 4. 20. 16 | 2. 8. 17,3 | 12. 58. 53 | 2. 4,4 | 10,8 |
| 25 | Sa. | 1. 5. 18. 36 | 2. 12. 2,9 | 13. 18. 28 | 2. 15,2 | 10,4 |
| 26 | *Su.* | 1. 6. 16. 53 | 2. 15. 49,1 | 13. 37. 49 | 2. 25,6 | 9,9 |
| 27 | M. | 1. 7. 15. 9 | 2. 19. 35,8 | 13. 56. 58 | 2. 35,5 | 9,4 |
| 28 | Tu. | 1. 8. 13. 23 | 2. 23. 22,8 | 14. 15. 53 | 2. 44,9 | 8,8 |
| 29 | W. | 1. 9. 11. 36 | 2. 27. 10,6 | 14. 34. 33 | 2. 53,7 | 8,3 |
| 30 | Th. | 1. 10. 9. 46 | 2. 30. 58,8 | 14. 52. 59 | 3. 2,0 | |

| Days of the Month. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 2,3 | 1. 4,4 | 2. 27,6 | 0. 000236 | 3. 3. 56 |
| 7 | 16. 0,6 | 1. 4,5 | 2. 27,1 | 0. 000963 | 3. 3. 37 |
| 13 | 15. 59,0 | 1. 4,8 | 2. 26,5 | 0. 001693 | 3. 3. 18 |
| 19 | 15. 57,5 | 1. 5,1 | 2. 26,1 | 0. 002425 | 3. 2. 59 |
| 25 | 15. 56,0 | 1. 5,5 | 2. 25,6 | 0. 003130 | 3. 2. 40 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Emerfions. | | II. Satellite. Emerfions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 1 | 19. 39. 26 | 1 | 15. 46. 39 | 3 | 0. 3. 24 I |
| 3 | 14* 8. 39 | 5 | 5. 6. 4 | 8 | 3. 33. 12 E |
| 5 | 8*37. 47 | 8 | 18. 25. 28 | 10 | 4. 4. 43 I |
| 7 | 3. 7. 0 | 12 | 7*44. 51 | 10 | 7. 34. 8 E |
| 8 | 21. 36. 8 | 15 | 21. 4. 14 | 17 | 8* 5. 47 I |
| 10 | 16. 5. 17 | 19 | 10*23. 29 | 17 | 11*34. 49 E |
| 12 | 10*34. 24 | 22 | 23. 42. 45 | 24 | 12* 6. 36 I |
| 14 | 5. 3. 30 | 26 | 13* 2. 3 | 24 | 15. 35. 12 E |
| 15 | 23. 32. 37 | 30 | 2. 21. 5 | | |
| 17 | 18. 1. 42 | | | IV. Satellite. | |
| 19 | 12*30. 47 | | | | |
| 21 | 6. 59. 51 | | | 5 | 9*46. 27 I |
| 23 | 1. 28. 50 | | | 5 | 14*26. 32 E |
| 24 | 19. 57. 49 | | | 22 | 3. 51. 38 I |
| 26 | 14. 26. 48 | | | 22 | 8*29. 57 E |
| 28 | 8*55. 44 | | | | |
| 30 | 3. 24. 36 | | | | |

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** Sup. ☌ 10d. 19h. | | | | | | |
| 1 | 11. 4. 44 | 6. 37 S | 0. 1. 51 | 1. 55 S | 1. 1 S | 23. 30 |
| 7 | 0. 1. 44 | 4. 53 | 0. 13. 38 | 1. 16 | 4. 13 N | 23. 51 |
| 13 | 1. 4. 1 | 1. 27 S | 0. 26. 7 | 0. 21 S | 9. 46 | 0. 10 |
| 19 | 2. 10. 44 | 2. 57 N | 1. 8. 46 | 0. 43 N | 15. 7 | 0. 35 |
| 25 | 3. 18. 6 | 6. 11 | 1. 20. 36 | 1. 43 | 19. 35 | 0. 58 |
| **VENUS.** | | | | | | |
| 1 | 0. 16. 48 | 2. 52 S | 0. 13. 56 | 1. 12 S | 4. 23 N | 0. 9 |
| 7 | 0. 26. 23 | 2. 32 | 0. 21. 22 | 1. 4 | 7. 21 | 0. 15 |
| 13 | 1. 5. 59 | 2. 7 | 0. 28. 47 | 0. 53 | 10. 13 | 0. 21 |
| 19 | 1. 15. 36 | 1. 39 | 1. 6. 12 | 0. 42 | 12. 56 | 0. 27 |
| 25 | 1. 25. 13 | 1. 8 | 1. 13. 36 | 0. 29 | 15. 29 | 0. 33 |
| **MARS.** | | | | | | |
| 1 | 1. 8. 52 | 0. 18 S | 0. 27. 55 | 0. 11 S | 10. 34 N | 1. 0 |
| 7 | 1. 12. 17 | 0. 12 | 1. 2. 20 | 0. 7 | 12. 11 | 0. 55 |
| 13 | 1. 15. 39 | 0. 5 S | 1. 6. 44 | 0. 3 S | 13. 44 | 0. 50 |
| 19 | 1. 18. 59 | 0. 1 N | 1. 11. 6 | 0. 1 N | 15. 12 | 0. 45 |
| 25 | 1. 22. 17 | 0. 8 | 1. 15. 26 | 0. 5 | 16. 34 | 0. 40 |
| **JUPITER.** | | | | | | |
| 1 | 4. 25. 53 | 0. 58 N | 4. 17. 8 | 1. 6 N | 16. 46 N | 8. 35 |
| 7 | 4. 26. 21 | 0. 59 | 4. 16. 59 | 1. 5 | 16. 48 | 8. 12 |
| 13 | 4. 26. 49 | 0. 59 | 4. 16. 56 | 1. 5 | 16. 48 | 7. 50 |
| 19 | 4. 27. 17 | 0. 59 | 4. 17. 0 | 1. 4 | 16. 47 | 7. 28 |
| 25 | 4. 27. 45 | 1. 0 | 4. 17. 11 | 1. 3 | 16. 43 | 7. 7 |
| **SATURN.** | | | | | | |
| 1 | 7. 11. 4 | 2. 21 N | 7. 14. 11 | 2. 35 N | 13. 39 S | 14. 4 |
| 7 | 7. 11. 15 | 2. 21 | 7. 13. 48 | 2. 36 | 13. 31 | 13. 41 |
| 13 | 7. 11. 26 | 2. 21 | 7. 13. 24 | 2. 36 | 13. 24 | 13. 17 |
| 19 | 7. 11. 37 | 2. 21 | 7. 12. 59 | 2. 37 | 13. 16 | 12. 54 |
| 25 | 7. 11. 49 | 2. 21 | 7. 12. 33 | 2. 37 | 13. 8 | 12. 30 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | W. | 2. 4. 33. 10 | 2. 11. 47. 57 | 2. 24. 57 S | 1. 50. 17 S |
| 2 | Th. | 2. 18. 58. 58 | 2. 26. 5. 57 | 1. 14. 4 S | 0. 37. 2 S |
| 3 | F. | 3. 3. 8. 46 | 3. 10. 7. 21 | 0. 0. 14 N | 0. 37. 9 N |
| 4 | Sa. | 3. 17. 1. 46 | 3. 23. 52. 8 | 1. 13. 9 | 1. 47. 43 |
| 5 | *Su.* | 4. 0. 38. 32 | 4. 7. 21. 12 | 2. 20. 26 | 2. 50. 52 |
| 6 | M. | 4. 14. 0. 17 | 4. 20. 35. 56 | 3. 18. 40 | 3. 43. 32 |
| 7 | Tu. | 4. 27. 8. 21 | 5. 3. 37. 40 | 4. 5. 15 | 4. 23. 34 |
| 8 | W. | 5. 10. 4. 1 | 5. 16. 27. 30 | 4. 38. 22 | 4. 49. 32 |
| 9 | Th. | 5. 22. 48. 11 | 5. 29. 6. 10 | 4. 57. 3 | 5. 0. 50 |
| 10 | F. | 6. 5. 21. 29 | 6. 11. 34. 12 | 5. 1. 0 | 4. 57. 33 |
| 11 | Sa. | 6. 17. 44. 20 | 6. 23. 52. 0 | 4. 50. 38 | 4. 40. 23 |
| 12 | *Su.* | 6. 29. 57. 15 | 7. 6. 0. 12 | 4. 26. 59 | 4. 10. 37 |
| 13 | M. | 7. 12. 0. 59 | 7. 17. 59. 51 | 3. 51. 31 | 3. 29. 56 |
| 14 | Tu. | 7. 23. 56. 57 | 7. 29. 52. 39 | 3. 6. 7 | 2. 40. 18 |
| 15 | W. | 8. 5. 47. 16 | 8. 11. 41. 13 | 2. 12. 50 | 1. 43. 55 |
| 16 | Th. | 8. 17. 34. 54 | 8. 23. 28. 56 | 1. 13. 52 | 0. 42. 57 N |
| 17 | F. | 8. 29. 23. 44 | 9. 5. 20. 1 | 0. 11. 28 N | 0. 20. 18 S |
| 18 | Sa. | 9. 11. 18. 17 | 9. 17. 19. 16 | 0. 52. 3 S | 1. 23. 28 |
| 19 | *Su.* | 9. 23. 23. 34 | 9. 29. 31. 55 | 1. 54. 16 | 2. 24. 3 |
| 20 | M. | 10. 5. 44. 52 | 10. 12. 3. 7 | 2. 52. 32 | 3. 19. 18 |
| 21 | Tu. | 10. 18. 27. 11 | 10. 24. 57. 40 | 3. 44. 0 | 4. 6. 12 |
| 22 | W. | 11. 1. 34. 54 | 11. 8. 19. 16 | 4. 25. 31 | 4. 41. 29 |
| 23 | Th. | 11. 15. 10. 54 | 11. 22. 9. 50 | 4. 53. 45 | 5. 1. 52 |
| 24 | F. | 11. 29. 15. 49 | 0. 6. 28. 33 | 5. 5. 32 | 5. 4. 26 |
| 25 | Sa. | 0. 13. 47. 20 | 0. 21. 11. 26 | 4. 58. 23 | 4. 47. 16 |
| 26 | *Su.* | 0. 28. 39. 50 | 1. 6. 11. 19 | 4. 31. 10 | 4. 10. 15 |
| 27 | M. | 1. 13. 44. 47 | 1. 21. 18. 43 | 3. 44. 51 | 3. 15. 26 |
| 28 | Tu. | 1. 28. 52. 3 | 2. 6. 23. 34 | 2. 42. 36 | 2. 6. 59 |
| 29 | W. | 2. 13. 52. 11 | 2. 21. 16. 58 | 1. 29. 22 | 0. 50. 30 S |
| 30 | Th. | 2. 28. 37. 15 | 3. 5. 52. 29 | 0. 11. 8 | 0. 28. 0 N |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſcen. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declination at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | W. | 5 | 3. 37 | 63. 4 | 70. 33 | 18. 42 N | 20. 24 N |
| 2 | Th. | 6 | 4. 36 | 78. 7 | 85. 46 | 21. 46 | 22. 47 |
| 3 | F. | 7 | 5. 36 | 93. 26 | 101. 4 | 23. 26 | 23. 42 |
| 4 | Sa. | 8 | 6. 35 | 108. 38 | 116. 5 | 23. 35 | 23. 7 |
| 5 | *Su.* | 9 | 7. 32 | 123. 24 | 130. 32 | 22. 19 | 21. 12 |
| 6 | M. | 10 | 8. 26 | 137. 29 | 144. 15 | 19. 49 | 18. 10 |
| 7 | Tu. | 11 | 9. 16 | 150. 49 | 157. 11 | 16. 19 | 14. 17 |
| 8 | W. | 12 | 10. 3 | 163. 24 | 169. 27 | 12. 6 | 9. 47 |
| 9 | Th. | 13 | 10. 48 | 175. 22 | 181. 11 | 7. 24 | 4. 57 N |
| 10 | F. | 1 | 11. 31 | 186. 54 | 192. 35 | 2. 28 N | 0. 1 S |
| 11 | Sa. | 15 | 12. 14 | 198. 12 | 203. 49 | 2. 29 S | 4. 56 |
| 12 | *Su.* | 16 | 12. 56 | 209. 26 | 215. 5 | 7. 18 | 9. 36 |
| 13 | M. | 17 | 13. 40 | 220. 40 | 226. 32 | 11. 47 | 13. 51 |
| 14 | Tu. | 18 | 14. 25 | 232. 22 | 238. 17 | 15. 46 | 17. 32 |
| 15 | W. | 19 | 15. 11 | 244. 18 | 250. 23 | 19. 7 | 20. 30 |
| 16 | Th. | 20 | 15. 59 | 256. 38 | 262. 56 | 21. 40 | 22. 35 |
| 17 | F. | 21 | 16. 49 | 269. 20 | 275. 58 | 23. 16 | 23. 42 |
| 18 | Sa. | 22 | 17. 40 | 282. 22 | 288. 58 | 23. 51 | 23. 43 |
| 19 | *Su.* | 23 | 18. 31 | 295. 37 | 302. 13 | 23. 19 | 22. 37 |
| 20 | M. | 24 | 19. 22 | 308. 53 | 315. 31 | 21. 38 | 20. 23 |
| 21 | Tu. | 25 | 20. 12 | 322. 6 | 328. 41 | 18. 52 | 17. 5 |
| 22 | W. | 26 | 21. 3 | 335. 14 | 341. 46 | 15. 3 | 12. 48 |
| 23 | Th. | 27 | 21. 53 | 348. 17 | 354. 49 | 10. 21 | 7. 44 |
| 24 | F. | 28 | 22. 44 | 1. 21 | 7. 57 | 4. 58 S | 2. 5 S |
| 25 | Sa. | 29 | 23. 37 | 14. 37 | 21. 22 | 0. 52 N | 3. 50 N |
| 26 | *Su.* | 1 | ♂ | 28. 15 | 35. 16 | 6. 47 | 9. 39 |
| 27 | M. | 2 | 0. 32 | 42. 26 | 49. 46 | 12. 24 | 14. 58 |
| 28 | Tu. | 3 | 1. 29 | 57. 17 | 64. 55 | 17. 17 | 19. 19 |
| 29 | W. | 4 | 2. 30 | 72. 41 | 80. 34 | 21. 1 | 22. 20 |
| 30 | Th. | 5 | 3. 32 | 88. 30 | 96. 25 | 23. 16 | 23. 48 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Log. at Noon. | Proport. Log. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | W. | 16. 25 | 16. 22 | 60. 14 | 60. 2 | 4754 | 4769 |
| 2 | Th. | 16. 18 | 16. 13 | 59. 48 | 59. 32 | 4786 | 4805 |
| 3 | F. | 16. 9 | 16. 4 | 59. 15 | 58. 58 | 4820 | 4846 |
| 4 | Sa. | 15. 59 | 15. 54 | 58. 40 | 58. 22 | 4869 | 4891 |
| 5 | *Su.* | 15. 49 | 15. 44 | 58. 3 | 57. 45 | 4915 | 4937 |
| 6 | M. | 15. 39 | 15. 35 | 57. 27 | 57. 10 | 4960 | 4981 |
| 7 | Tu. | 15. 30 | 15. 25 | 56. 53 | 56. 36 | 5003 | 5025 |
| 8 | W. | 15. 21 | 15. 17 | 56. 21 | 56. 6 | 5044 | 5063 |
| 9 | Th. | 15. 13 | 15. 10 | 55. 52 | 55. 38 | 5081 | 5099 |
| 10 | F. | 15. 6 | 15. 3 | 55. 25 | 55. 13 | 5116 | 5132 |
| 11 | Sa. | 15. 0 | 14. 57 | 55. 2 | 54. 51 | 5147 | 5161 |
| 12 | *Su.* | 14. 54 | 14. 52 | 54. 42 | 54. 34 | 5173 | 5183 |
| 13 | M. | 14. 50 | 14. 49 | 54. 26 | 54. 21 | 5194 | 5201 |
| 14 | Tu. | 14. 47 | 14. 46 | 54. 16 | 54. 13 | 5207 | 5211 |
| 15 | W. | 14. 46 | 14. 46 | 54. 12 | 54. 13 | 5213 | 5211 |
| 16 | Th. | 14. 47 | 14. 48 | 54. 16 | 54. 20 | 5207 | 5202 |
| 17 | F. | 14. 50 | 14. 53 | 54. 27 | 54. 36 | 5193 | 5181 |
| 18 | Sa. | 14. 56 | 15. 0 | 54. 48 | 55. 2 | 5165 | 5146 |
| 19 | *Su.* | 15. 4 | 15. 9 | 55. 18 | 55. 37 | 5125 | 5100 |
| 20 | M. | 15. 15 | 15. 21 | 55. 58 | 56. 21 | 5073 | 5044 |
| 21 | Tu. | 15. 28 | 15. 35 | 56. 46 | 57. 13 | 5012 | 4977 |
| 22 | W. | 15. 43 | 15. 51 | 57. 40 | 58. 9 | 4943 | 4907 |
| 23 | Th. | 15. 58 | 16. 6 | 58. 37 | 59. 5 | 4872 | 4838 |
| 24 | F. | 16. 13 | 16. 20 | 59. 32 | 59. 57 | 4803 | 4775 |
| 25 | Sa. | 16. 26 | 16. 32 | 60. 19 | 60. 39 | 4748 | 4724 |
| 26 | *Su.* | 16. 36 | 16. 39 | 60. 54 | 61. 6 | 4707 | 4692 |
| 27 | M. | 16. 41 | 16. 41 | 61. 13 | 61. 15 | 4684 | 4682 |
| 28 | Tu. | 16. 41 | 16. 39 | 61. 13 | 61. 6 | 4684 | 4692 |
| 29 | W. | 16. 36 | 16. 32 | 60. 55 | 60. 41 | 4705 | 4722 |
| 30 | Th. | 16. 27 | 16. 22 | 60. 23 | 60. 3 | 4743 | 4768 |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 82. 13. 18 | 80. 24. 15 | 78. 35. 24 | 76. 46. 46 |
| 2 | | 67. 46. 55 | 65. 59. 39 | 64. 12. 39 | 62. 25. 54 |
| 3 | Regulus. | 53. 36. 16 | 51. 51. 3 | 50. 6. 13 | 48. 21. 40 |
| 4 | | 39. 43. 14 | 38. 0. 26 | 36. 17. 56 | 34. 35. 46 |
| 5 | | 26. 9. 50 | | | |
| 5 | | 80. 12. 24 | 78. 31. 56 | 76. 51. 43 | 75. 11. 44 |
| 6 | | 66. 55. 47 | 65. 17. 21 | 63. 39. 11 | 62. 1. 16 |
| 7 | Spica ♍ | 53. 55. 28 | 52. 19. 4 | 50. 42. 55 | 49. 7. 2 |
| 8 | | 41. 11. 36 | 39. 37. 20 | 38. 3. 23 | 36. 29. 46 |
| 9 | | 28. 46. 52 | | | |
| 9 | | 74. 23. 5 | 72. 49. 23 | 71. 15. 52 | 69. 42. 32 |
| 10 | | 61. 58. 38 | 60. 26. 24 | 58. 54. 20 | 57. 22. 28 |
| 11 | Antares. | 49. 45. 55 | 48. 15. 10 | 46. 44. 37 | 45. 14. 16 |
| 12 | | 37. 45. 38 | 36. 16. 34 | 34. 47. 46 | 33. 19. 14 |
| 13 | | 26. 1. 14 | | | |
| 13 | | 76. 27. 14 | 75. 11. 32 | 73. 56. 6 | 72. 40. 57 |
| 14 | α Aquilæ. | 66. 30. 5 | 65. 16. 58 | 64. 4. 18 | 62. 52. 3 |
| 15 | | 56. 58. 9 | | | |
| 15 | | 55. 6. 0 | 53. 38. 16 | 52. 10. 36 | 50. 43. 0 |
| 16 | β Capri-corni. | 43. 25. 49 | 41. 58. 31 | 40. 31. 17 | 39. 4. 7 |
| 17 | | 31. 49. 21 | | | |
| 17 | | 81. 26. 45 | 80. 5. 40 | 78. 44. 36 | 77. 23. 30 |
| 18 | α Pegasi. | 70. 37. 59 | 69. 16. 53 | 67. 55. 49 | 66. 34. 47 |
| 19 | | 59. 50. 30 | 58. 29. 56 | 57. 9. 30 | 55. 49. 13 |
| 17 | | 118. 7. 34 | 116. 45. 58 | 115. 24. 16 | 114. 2. 27 |
| 18 | | 107. 11. 22 | 105. 48. 41 | 104. 25. 50 | 103. 2. 47 |
| 19 | | 96. 4. 30 | 94. 40. 9 | 93. 15. 33 | 91. 50. 41 |
| 20 | The Sun. | 84. 42. 15 | 83. 15. 40 | 81. 48. 45 | 80. 21. 31 |
| 21 | | 73. 0. 12 | 71. 30. 50 | 70. 1. 5 | 68. 30. 57 |
| 22 | | 60. 54. 22 | 59. 21. 49 | 57. 48. 51 | 56. 15. 27 |
| 23 | | 48. 22. 13 | 46. 46. 18 | 45. 9. 58 | 43. 33. 15 |
| 28 | | 87. 54. 13 | 86. 1. 8 | 84. 8. 11 | 82. 15. 22 |
| 29 | Regulus. | 72. 53. 49 | 71. 2. 6 | 69. 10. 39 | 67. 19. 27 |
| 30 | | 58. 7. 45 | 56. 18. 21 | 54. 29. 17 | 52. 40. 35 |
| M.1 | | 43. 42. 32 | | | |

9

9

Distances of ☽'s Center from ☉, and from Stars east of her.

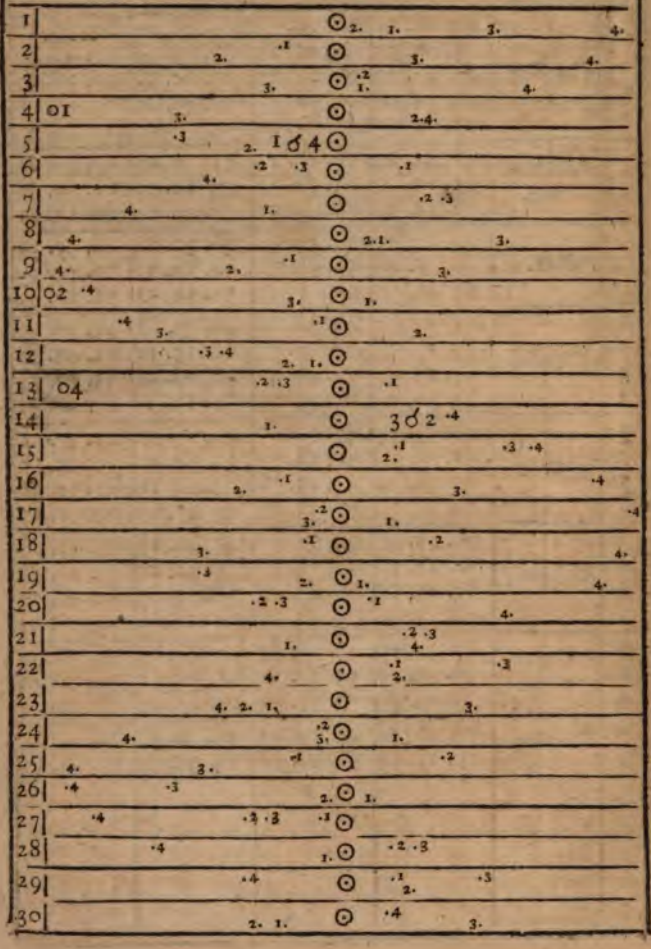
| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Regulus. | 74. 58. 20 | 73. 10. 8 | 71. 22. 10 | 69. 34. 25 |
| 2 | | 60. 39. 25 | 58. 53. 12 | 57. 7. 15 | 55. 21. 34 |
| 3 | | 46. 37. 23 | 44. 53. 25 | 43. 9. 44 | 41. 26. 20 |
| 4 | | 32. 53. 54 | 31. 12. 22 | 29. 31. 11 | 27. 50. 20 |
| 5 | The Sun. | 73. 32. 2 | 71. 52. 35 | 70. 13. 23 | 68. 34. 28 |
| 6 | | 60. 23. 37 | 58. 46. 12 | 57. 9. 2 | 55. 32. 7 |
| 7 | | 47. 31. 25 | 45. 56. 4 | 44. 20. 58 | 42. 46. 9 |
| 8 | | 34. 56. 28 | 33. 23. 30 | 31. 50. 55 | 30. 18. 43 |
| 9 | Antares. | 68. 9. 23 | 66. 36. 25 | 65. 3. 38 | 63. 31. 3 |
| 10 | | 55. 50. 47 | 54. 19. 17 | 52. 47. 58 | 51. 16. 51 |
| 11 | | 43. 44. 7 | 42. 14. 10 | 40. 44. 26 | 39. 14. 55 |
| 12 | | 31. 50. 59 | 30. 23. 3 | 28. 55. 26 | 27. 28. 10 |
| 13 | α Aquilæ | 71. 26. 6 | 70. 11. 34 | 68. 57. 23 | 67. 43. 33 |
| 14 | | 61. 40. 15 | 60. 28. 56 | 59. 18. 8 | 58. 7. 52 |
| 15 | β Capricorni. | 49. 15. 27 | 47. 47. 58 | 46. 20. 31 | 44. 53. 9 |
| 16 | | 37. 37. 0 | 36. 9. 58 | 34. 43. 1 | 33. 16. 9 |
| 17 | α Pegasi. | 76. 2. 24 | 74. 41. 17 | 73. 20. 11 | 71. 59. 5 |
| 18 | | 65. 13. 47 | 63. 52. 50 | 62. 31. 58 | 61. 11. 11 |
| 19 | | 54. 29. 5 | | | |
| 17 | The Sun. | 112. 40. 31 | 111. 18. 27 | 109. 56. 14 | 108. 33. 53 |
| 18 | | 101. 39. 33 | 100. 16. 7 | 98. 52. 28 | 97. 28. 36 |
| 19 | | 90. 25. 34 | 89. 0. 11 | 87. 34. 30 | 86. 8. 31 |
| 20 | | 78. 53. 57 | 77. 26. 3 | 75. 57. 47 | 74. 29. 11 |
| 21 | | 67. 0. 26 | 65. 29. 31 | 63. 58. 12 | 62. 26. 29 |
| 22 | | 54. 41. 39 | 53. 7. 25 | 51. 32. 46 | 49. 57. 42 |
| 23 | | 41. 56. 7 | 40. 18. 35 | 38. 40. 40 | |
| 28 | Regulus. | 80. 22. 41 | 78. 30. 11 | 76. 37. 52 | 74. 45. 44 |
| 29 | | 65. 28. 30 | 63. 37. 51 | 61. 47. 31 | 59. 57. 29 |
| 30 | | 50. 52. 13 | 49. 4. 13 | 47. 16. 36 | 45. 29. 22 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 52. 44. 34 | 54. 25. 49 | 56. 6. 54 | 57. 47. 48 |
| 2 | | 66. 9. 20 | 67. 49. 0 | 69. 28. 24 | 71. 7. 35 |
| 3 | The Sun. | 79. 19. 46 | 80. 57. 26 | 82. 34. 51 | 84. 12. 0 |
| 4 | | 92. 13. 47 | 93. 49. 21 | 95. 24. 38 | 96. 59. 40 |
| 5 | | 104. 50. 52 | 106. 24. 20 | 107. 57. 32 | 109. 30. 31 |
| 6 | | 117. 11. 31 | 118. 42. 59 | 120. 14. 12 | |
| 4 | | 40. 50. 53 | 42. 33. 50 | 44. 16. 33 | 45. 59. 1 |
| 5 | Aldeba- | 54. 27. 35 | 56. 8. 34 | 57. 49. 19 | 59. 29. 50 |
| 6 | ran. | 67. 48. 47 | 69. 27. 52 | 71. 6. 43 | 72. 45. 21 |
| 7 | | 80. 55. 13 | | | |
| 7 | | 36. 54. 2 | 38. 30. 28 | 40. 6. 46 | 41. 42. 54 |
| 8 | Pollux. | 49. 41. 22 | 51. 16. 35 | 52. 51. 38 | 54. 26. 32 |
| 9 | | 62. 18. 34 | 63. 52. 30 | 65. 26. 15 | 66. 59. 52 |
| 10 | | 74. 45. 32 | | | |
| 10 | | 38. 49. 21 | 40. 21. 58 | 41. 54. 27 | 43. 26. 48 |
| 11 | | 51. 6. 30 | 52. 38. 3 | 54. 9. 28 | 55. 40. 45 |
| 12 | Regulus. | 63. 15. 17 | 64. 45. 49 | 66. 16. 14 | 67. 46. 31 |
| 13 | | 75. 16. 17 | 76. 45. 55 | 78. 15. 28 | 79. 44. 55 |
| 14 | | 87. 10. 51 | | | |
| 14 | | 33. 34. 54 | 35. 2. 3 | 36. 29. 16 | 37. 56. 32 |
| 15 | | 45. 13. 38 | 46. 41. 10 | 48. 8. 44 | 49. 36. 20 |
| 16 | Spica ♍ | 56. 54. 57 | 58. 22. 50 | 59. 50. 47 | 61. 18. 48 |
| 17 | | 68. 40. 1 | 70. 8. 33 | 71. 37. 12 | 73. 5. 58 |
| 18 | | 80. 31. 49 | | | |
| 18 | | 34. 47. 6 | 36. 15. 35 | 37. 44. 21 | 39. 13. 24 |
| 19 | | 46. 42. 59 | 48. 13. 46 | 49. 44. 52 | 51. 16. 16 |
| 20 | Antares. | 58. 57. 54 | 60. 31. 13 | 62. 4. 52 | 63. 38. 53 |
| 21 | | 71. 34. 22 | 73. 10. 37 | 74. 47. 15 | 76. 24. 18 |
| 22 | | 84. 35. 36 | | | |
| 22 | | 31. 54. 34 | 33. 32. 7 | 35. 10. 18 | 36. 49. 6 |
| 23 | β Capri- | 45. 11. 42 | 46. 53. 51 | 48. 36. 31 | 50. 19. 42 |
| 24 | corni. | 59. 2. 53 | 60. 48. 56 | 62. 35. 25 | 64. 22. 20 |
| 25 | | 73. 22. 58 | | | |
| 30 M.1 | The Sun. | 48. 27. 30<br>61. 54. 39 | 50. 9. 31 | 51. 51. 13 | 53. 32. 37 |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 59. 28. 32 | 61. 9. 3 | 62. 49. 21 | 64. 29. 27 |
| 2 | | 72. 46. 32 | 74. 25. 13 | 76. 3. 39 | 77. 41. 50 |
| 3 | | 85. 48. 53 | 87. 25. 30 | 89. 1. 52 | 90. 37. 57 |
| 4 | | 98. 34. 26 | 100. 8. 56 | 101. 43. 10 | 103. 17. 8 |
| 5 | | 111. 3. 13 | 112. 35. 40 | 114. 7. 52 | 115. 39. 49 |
| 4 | Aldebaran. | 47. 41. 13 | 49. 23. 10 | 51. 4. 53 | 52. 46. 21 |
| 5 | | 61. 10. 6 | 62. 50. 8 | 64. 29. 55 | 66. 9. 28 |
| 6 | | 74. 23. 45 | 76. 1. 57 | 77. 39. 55 | 79. 17. 41 |
| 7 | Pollux. | 43. 18. 54 | 44. 54. 45 | 46. 30. 26 | 48. 5. 58 |
| 8 | | 56. 1. 16 | 57. 35. 50 | 59. 10. 14 | 60. 44. 29 |
| 9 | | 68. 33. 20 | 70. 6. 37 | 71. 39. 44 | 73. 12. 43 |
| 10 | Regulus. | 44. 59. [illegible] | 46. 31. 4 | 48. 3. 1 | 49. 34. 49 |
| 11 | | 57. 11. 55 | 58. 42. 57 | 60. 13. 51 | 61. 44. 38 |
| 12 | | 69. 16. 42 | 70. 46. 45 | 72. 16. 42 | 73. 46. 33 |
| 13 | | 81. 14. 1 | 82. 43. 33 | 84. 12. 44 | 85. 41. 50 |
| 14 | Spica ♍ | 39. 23. 54 | 40. 51. 15 | 42. 18. 40 | 43. 46. 8 |
| 15 | | 51. 3. 59 | 52. 31. 39 | 53. 59. 22 | 55. 27. 8 |
| 16 | | 62. 46. 53 | 64. 15. 2 | 65. 43. 16 | 67. 11. 36 |
| 17 | | 74. 34. 52 | 76. 3. 53 | 77. 33. 3 | 79. 2. 22 |
| 18 | Antares. | 40. 42. 43 | 42. 12. 22 | 43. 42. 17 | 45. 12. 29 |
| 19 | | 52. 47. 58 | 54. 19. 58 | 55. 52. 17 | 57. 24. 56 |
| 20 | | 65. 13. 15 | 66. 47. 58 | 68. 23. 3 | 69. 58. 31 |
| 21 | | 78. 1. 47 | 79. 39. 36 | 81. 17. 51 | 82. 56. 31 |
| 22 | ♑ Capricorni. | 38. 28. 29 | 40. 8. 27 | 41. 48. 59 | 43. 30. 4 |
| 23 | | 52. 3. 23 | 53. 47. 33 | 55. 32. 11 | 57. 17. 18 |
| 24 | | 66. 9. 41 | 67. 57. 26 | 69. 45. 34 | 71. 34. 5 |
| 29 | The Sun. | 41. 36. 42 | 43. 19. 47 | 45. 2. 37 | 46. 45. 12 |
| 30 | | 55. 13. 43 | 56. 54. 28 | 58. 34. 53 | 60. 14. 55 |

## Configurations of the SATELLITES of JUPITER at 9 o'th' Clock in the Evening.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | F. | *St. Philip and St. James.* |
| 2 | Sa. | [the Crofs. |
| 3 | *Su.* | *2d Su. after Eaft.* Inv. of |
| 4 | M. | From Eaſter in 15 days, |
| 5 | Tu. | [1 ret. |
| 6 | W. | John Ev. ante Port. Lat. |
| 7 | Th. | [Eaſter Term begins. |
| 8 | F. | |
| 9 | Sa. | |
| 10 | *Su.* | *3d Sunday after Eaſter.* |
| 11 | M. | From Eaſter in 3 weeks, |
| 12 | Tu. | [2 ret. |
| 13 | W. | |
| 14 | Th. | |
| 15 | F. | |
| 16 | Sa. | |
| 17 | *Su.* | *4th Sunday after Eaſter.* |
| 18 | M. | From Eaſt. in 1 mon. 3 ret. |
| 19 | Tu. | ♀ *Charlotte born.* Dunſt. |
| 20 | W. | |
| 21 | Th. | |
| 22 | F. | *Prs. Elizabeth born.* |
| 23 | Sa. | |
| 24 | *Su.* | *5th Su. after Eaſt. Rog. Su.* |
| 25 | M. | From Eaſt. in 5 w. 4 ret. |
| 26 | Tu. | Auguſt. 1ſt Abp. of Cant. |
| 27 | W. | Venerable Bede. |
| 28 | Th. | *Aſcenſion-day. H. Thurſ.* |
| 29 | F. | *K. Char. II. Reſtor.* On |
| 30 | Sa. | [mor. of Aſc. 5 ret. |
| 31 | *Su.* | *Sunday after Aſcenſion-day.* |

Phaſes of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter— | 3. | 4. | 28 |
| Full Moon —— | 11. | 0. | 7 |
| Laſt Quarter —— | 19. | 2. | 37 |
| New Moon —— | 25. | 20. | 34 |

D. Other Phenomena.

1. ☾ ☌ ♊ $4^h$. 3′.
2. ☾ ☽ ♋ $12^h$. 52′.
4. ☾ ☍ ♌ $1^h$. 21′.
5. ☾ ☌ ♌ $13^h$. 50′.
6. ☾ ☍ ♑ $20^h$. 2′.
10. ☾ ☌ ♄ $5^h$. 12′.
11. ☾ 4 ad ♎ $2^h$. 24′.
☾ ☽ ♎ $2^h$. 37′.
☾ ☍ ♎ $7^h$. 9′.
☾ ☌ ♎ $12^h$. 12′.
13. ☾ ☿ Serpentar. $6^h$. 55′.
18. ☾ ☋ $4^h$. 58′.
20. ☾ 1 ad ♐ $5^h$. 16′.
☾ 2 ad ♐ $6^h$. 4′.
☾ 3 ad ♐ $6^h$. 11′.
☉ enters ♊ at $13^h$. 42.
21. ☾ 33 ♓ $3^h$. 38′.
♂ ☿ ♀ diff. Lat. 2′.
☿ Stationary.
27. ☾ ☍ ♊ $12^h$. 37′.
☾ ☌ ♊ $15^h$. 36′.
28. ☾ ☌ ♊ $13^h$. 2′.
29. ☾ ☽ ♍ $20^h$. 47′.
31. ☾ ☍ ♌ $8^h$. 13′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | F. | 1. 11. 7. 53 | 2.34.47,5 | 15. 11. 11 | 3. 9,8 | 7,2 |
| 2 | Sa. | 1. 12. 6. 1 | 2.38.36,8 | 15. 29. 7 | 3. 17,0 | 6,8 |
| 3 | *Su.* | 1. 13. 4. 5 | 2.42,26,5 | 15. 46. 48 | 3. 23,8 | 6,3 |
| 4 | M. | 1. 14. 2. 7 | 2.46.16,8 | 16. 4. 13 | 3. 30,1 | 5,7 |
| 5 | Tu. | 1. 15. 0. 8 | 2.50. 7,7 | 16. 21. 22 | 3. 35,8 | 5,1 |
| 6 | W. | 1. 15. 58. 7 | 2.53.59,2 | 16. 38. 15 | 3. 40,9 | 4,6 |
| 7 | Th. | 1. 16. 56. 3 | 2.57,51,1 | 16. 54. 52 | 3. 45,5 | 4,1 |
| 8 | F. | 1. 17. 53. 58 | 3. 1.43,5 | 17. 11. 11 | 3. 49,6 | 3,5 |
| 9 | Sa. | 1. 18. 51. 51 | 3. 5.36,5 | 17. 27. 13 | 3. 53,1 | 2,9 |
| 10 | *Su.* | 1. 19. 49. 42 | 3. 9.30,1 | 17. 42. 58 | 3. 56,0 | 2,4 |
| 11 | M. | 1. 20. 47. 32 | 3.13.24,3 | 17. 58. 25 | 3. 58,4 | 1,8 |
| 12 | Tu. | 1. 21. 45. 21 | 3.17.19,1 | 18. 13. 34 | 4. 0,2 | 1,2 |
| 13 | W. | 1. 22. 43. 7 | 3.21.14,4 | 18. 28. 25 | 4. 1,4 | 0,6 |
| 14 | Th. | 1. 23. 40. 53 | 3.25.10,3 | 18. 42. 57 | 4. 2,0 | 0,1 |
| 15 | F. | 1. 24. 38. 37 | 3.29. 6,8 | 18. 57. 10 | 4. 2,1 | 0,5 |
| 16 | Sa. | 1. 25. 36. 21 | 3.33. 3,9 | 19. 11. 5 | 4. 1,6 | 1,1 |
| 17 | *Su.* | 1. 26. 34. 4 | 3.37. 1,7 | 19. 24. 40 | 4. 0,5 | 1,7 |
| 18 | M. | 1. 27. 31. 45 | 3.40.59,9 | 19. 37. 56 | 3. 58,8 | 2,4 |
| 19 | Tu. | 1. 28. 29. 26 | 3.44.58,8 | 19. 50. 51 | 3. 56,4 | 2,9 |
| 20 | W. | 1. 29. 27. 5 | 3.48.58,2 | 20. 3. 27 | 3. 53,5 | 3,4 |
| 21 | Th. | 2. 0. 24. 44 | 3.52.58,3 | 20. 15. 42 | 3. 50,1 | 4,0 |
| 22 | F. | 2. 1. 22. 22 | 3.56.58,8 | 20. 27. 37 | 3. 46,1 | 4,6 |
| 23 | Sa. | 2. 2. 19. 59 | 4. 1. 0,0 | 20. 39. 10 | 3. 41,5 | 5,1 |
| 24 | *Su.* | 2. 3. 17. 35 | 4. 5. 1,6 | 20. 50. 23 | 3. 36,4 | 5,7 |
| 25 | M. | 2. 4. 15. 10 | 4. 9. 3,8 | 21. 1. 14 | 3. 30,7 | 6,1 |
| 26 | Tu. | 2. 5. 12. 44 | 4.13. 6,5 | 21. 11. 43 | 3. 24,6 | 6,6 |
| 27 | W. | 2. 6. 10. 17 | 4.17. 9,7 | 21. 21. 51 | 3. 18,0 | 7,1 |
| 28 | Th. | 2. 7. 7. 49 | 4.21.13,4 | 21. 31. 36 | 3. 10,9 | 7,5 |
| 29 | F. | 2. 8. 5. 19 | 4.25.17,5 | 21. 40. 59 | 3. 3,4 | 7,9 |
| 30 | Sa. | 2. 9. 2. 47 | 4.29.21,9 | 21. 49. 59 | 2. 55,5 | 8,3 |
| 31 | *Su.* | 2. 10. 0. 17 | 4.33.27,0 | 21. 58. 37 | 2. 47,2 | 8,8 |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 15. 54,5 | 1. 5,9 | 2. 25,3 | 0. 003775 | 3. 2. 21 |
| 7 | 15. 53,2 | 1. 6,4 | 2. 24,9 | 0. 004356 | 3. 2. 2 |
| 13 | 15. 52,0 | 1. 6,9 | 2. 24,6 | 0. 004928 | 3. 1. 43 |
| 19 | 15. 50,8 | 1. 7,4 | 2. 24,2 | 0. 005458 | 3. 1. 24 |
| 25 | 15. 49,8 | 1. 7,8 | 2. 23,9 | 0. 005927 | 3. 1. 5 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Emersions. | | II. Satellite. Emersions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 1 | 21. 53. 33 | 3 | 15. 40. 12 | 1 | 16. 6. 52 I. |
| 3 | 16. 22. 21 | 7 | 4. 59. 9 | 1 | 19. 35. 6 E. |
| 5 | 10*51. 14 | 10 | 18. 17. 58 | 8 | 20. 6. 57 I. |
| 7 | 5. 19. 59 | 14 | 7. 36. 43 | 8 | 23. 34. 47 E. |
| 8 | 23. 48. 46 | 17 | 20. 55. 20 | 16 | 0. 6. 22 I. |
| 10 | 18. 17. 32 | 21 | 10*13. 53 | 16 | 3. 33. 50 E. |
| 12 | 12. 46. 12 | 24 | 23. 32. 17 | 23 | 4. 5. 19 I. |
| 14 | 7. 14. 55 | 28 | 12. 50. 31 | 23 | 7. 32. 20 E. |
| 16 | 1. 43. 33 | | | 30 | 8. 3. 42 I. |
| 17 | 20. 12. 9 | | | 30 | 11*30. 20 E. |
| 19 | 14. 40. 43 | | | IV. Satellite. | |
| 21 | 9* 9. 20 | | | | |
| 23 | 3. 37. 49 | | | 8 | 21. 55. 8 I. |
| 24 | 22. 6. 22 | | | 9 | 2. 31. 41 E. |
| 26 | 16. 34. 47 | | | 25 | 15. 55. 38 I. |
| 28 | 11* 3. 15 | | | 25 | 20. 29. 59 E. |
| 30 | 5. 31. 37 | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Paſſage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** Greateſt Elon. 8d. | | | | | | |
| 1 | 4. 21. 36 | 6. 57 N | 2. 0. 39 | 2. 22 N | 22. 38 N | 1. 17 |
| 7 | 5. 19. 29 | 5. 50 | 2. 8. 22 | 2. 32 | 24. 14 | 1. 27 |
| 13 | 6. 12. 37 | 3. 51 | 2. 13. 28 | 2. 7 | 24. 33 | 1. 26 |
| 19 | 7. 2. 27 | 1. 38 N | 2. 15. 45 | 1. 6 N | 23. 48 | 1. 12 |
| 25 | 7. 20. 13 | 0. 32 S | 2. 15. 14 | 0. 25 S | 22. 14 | 0. 45 |
| **VENUS.** | | | | | | |
| 1 | 2. 4. 53 | 0. 34 S | 1. 21. 0 | 0. 15 S | 17. 47 N | 0. 40 |
| 7 | 2. 14. 32 | 0. 0 | 1, 28. 22 | 0. 0 | 19. 50 | 0. 47 |
| 13 | 2. 24. 14 | 0. 34 N | 2. 5. 45 | 0. 15 N | 21. 32 | 0. 54 |
| 19 | 3. 3. 56 | 1. 7 | 2. 13. 7 | 0. 30 | 22. 53 | 1. 2 |
| 25 | 3. 13. 40 | 1. 40 | 2. 20. 28 | 0. 44 | 23. 51 | 1. 9 |
| **MARS.** | | | | | | |
| 1 | 1. 25. 33 | 0. 15 N | 1. 19. 45 | 0. 8 N | 17. 50 N | 0. 34 |
| 7 | 1. 28. 48 | 0. 20 | 1. 24. 1 | 0. 12 | 19. 0 | 0. 28 |
| 13 | 2. 2. 0 | 0. 26 | 1. 28. 16 | 0. 16 | 20. 4 | 0. 23 |
| 19 | 2. 5. 10 | 0. 32 | 2. 2. 29 | 0. 19 | 21. 0 | 0. 17 |
| 25 | 2. 8. 18 | 0. 38 | 2. 6. 41 | 0. 23 | 21. 50 | 0. 10 |
| **JUPITER.** □ 8d. 1h¼. | | | | | | |
| 1 | 4. 28. 13 | 1. 0 N | 4. 17. 28 | 1. 3 N | 16. 37 N | 6. 45 |
| 7 | 4. 28. 41 | 1. 0 | 4. 17. 52 | 1. 2 | 16. 29 | 6. 24 |
| 13 | 4. 29. 9 | 1. 1 | 4. 18. 21 | 1. 2 | 16. 20 | 6. 3 |
| 19 | 4. 29. 37 | 1. 1 | 4. 18. 55 | 1. 1 | 16. 8 | 5. 42 |
| 25 | 5. 0. 5 | 1. 2 | 4. 19. 34 | 1. 0 | 15. 55 | 5. 19 |
| **SATURN.** ☌ 1d. 22h¼. | | | | | | |
| 1 | 7. 12. 0 | 2. 21 N | 7. 12. 6 | 2. 37 N | 12. 59 S | 12. 5 |
| 7 | 7. 12. 11 | 2. 21 | 7. 11. 39 | 2. 36 | 12. 52 | 11. 40 |
| 13 | 7. 12. 22 | 2. 21 | 7. 11. 12 | 2. 36 | 12. 45 | 11. 15 |
| 19 | 7. 12. 33 | 2. 20 | 7. 10. 46 | 2. 35 | 12. 38 | 10. 49 |
| 25 | 7. 12. 45 | 2. 20 | 7. 10. 22 | 2. 35 | 12. 30 | 10. 24 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | F. | 3. 13. 2. 16 | 3. 20. 6. 30 | 1. 6. 13 N | 1. 42. 58 N |
| 2 | Sa. | 3. 27. 4. 59 | 4. 3. 57. 54 | 2. 17. 38 | 2. 49. 52 |
| 3 | *Su.* | 4. 10. 45. 20 | 4. 17. 27. 31 | 3. 19. 14 | 3. 45. 29 |
| 4 | M. | 4. 24. 4. 38 | 5. 0. 37. 5 | 4. 8. 18 | 4. 27. 39 |
| 5 | Tu. | 5. 7. 5. 7 | 5. 13. 29. 6 | 4. 43. 20 | 4. 55. 17 |
| 6 | W. | 5. 19. 49. 17 | 5. 26. 6. 2 | 5. 3. 29 | 5. 7. 55 |
| 7 | Th. | 6. 2. 19. 35 | 6. 8. 30. 19 | 5. 8. 40 | 5. 5. 48 |
| 8 | F. | 6. 14. 38. 24 | 6. 20. 44. 8 | 4. 59. 26 | 4. 49. 41 |
| 9 | Sa. | 6. 26. 47. 40 | 7. 2. 49. 17 | 4. 36. 43 | 4. 20. 43 |
| 10 | *Su.* | 7. 8. 49. 10 | 7. 14. 47. 31 | 4. 1. 54 | 3. 40. 29 |
| 11 | M. | 7. 20. 44. 31 | 7. 26. 40. 26 | 3. 16. 42 | 2. 50. 49 |
| 12 | Tu. | 8. 2. 35. 24 | 8. 8. 29. 48 | 2. 23. 7 | 1. 53. 54 |
| 13 | W. | 8. 14. 23. 48 | 8. 20. 17. 46 | 1. 23. 24 | 0. 52. 2 N |
| 14 | Th. | 8. 26. 12. 1 | 9. 2. 6. 59 | 0. 20. 1 N | 0. 12. 19 S |
| 15 | F. | 9. 8. 3. 3 | 9. 14. 0. 42 | 0. 44. 38 S | 1. 16. 40 |
| 16 | Sa. | 9. 20. 0. 22 | 9. 26. 2. 35 | 1. 48. 3 | 2. 18. 26 |
| 17 | *Su.* | 10. 2. 7. 55 | 10. 8. 16. 52 | 2. 47. 31 | 3. 15. 2 |
| 18 | M. | 10. 14. 29. 58 | 10. 20. 47. 53 | 3. 40. 31 | 4. 3. 41 |
| 19 | Tu. | 10. 27. 11. 4 | 11. 3. 39. 59 | 4. 24. 10 | 4. 41. 35 |
| 20 | W. | 11. 10. 15. 4 | 11. 16. 56. 46 | 4. 55. 36 | 5. 5. 52 |
| 21 | Th. | 11. 23. 45. 19 | 0. 0. 40. 50 | 5. 12. 0 | 5. 13. 48 |
| 22 | F. | 0. 7. 43. 18 | 0. 14. 52. 38 | 5. 10. 54 | 5. 3. 11 |
| 23 | Sa. | 0. 22. 8. 27 | 0. 29. 30. 10 | 4. 50. 30 | 4. 32. 54 |
| 24 | *Su.* | 1. 6. 57. 3 | 1. 14. 28. 9 | 4. 10. 28 | 3. 43. 32 |
| 25 | M. | 1. 22. 2. 28 | 1. 29. 38. 44 | 3. 12. 28 | 2. 37. 49 |
| 26 | Tu. | 2. 7. 15. 42 | 2. 14. 52. 3 | 2. 0. 16 | 1. 20. 38 S |
| 27 | W. | 2. 22. 26. 33 | 2. 29. 58. 3 | 0. 39. 40 S | 0. 1. 45 N |
| 28 | Th. | 3. 7. 25. 33 | 3. 14. 48. 11 | 0. 42. 49 N | 1. 22. 42 |
| 29 | F. | 3. 22. 5. 19 | 3. 29. 16. 23 | 2. 0. 46 | 2. 36. 24 |
| 30 | Sa. | 4. 6. 21. 6 | 4. 13. 19. 23 | 3. 9. 5 | 3. 38. 27 |
| 31 | *Su.* | 4. 20. 11. 10 | 4. 26. 56. 35 | 4. 4. 11 | 4. 26. 7 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | F. | 6 | 4. 32 | 104. 17 | 112. 3 | 23. 55 N | 23. 39 N |
| 2 | Sa. | 7 | 5. 32 | 119. 37 | 127. 1 | 23. 1 | 22. 2 |
| 3 | *Su.* | 8 | 6. 28 | 134. 11 | 141. 7 | 20. 45 | 19. 13 |
| 4 | M. | 9 | 7. 19 | 147. 50 | 154. 19 | 17. 25 | 15. 26 |
| 5 | Tu. | 10 | 8. 7 | 160. 35 | 166. 42 | 13. 18 | 11. 2 |
| 6 | W. | 11 | 8. 52 | 172. 39 | 178. 29 | 8. 41 | 6. 15 |
| 7 | Th. | 12 | 9. 35 | 184. 11 | 189. 49 | 3. 47 N | 1. 18 N |
| 8 | F. | 13 | 10. 17 | 195. 24 | 200. 58 | 1. 10 S | 3. 38 S |
| 9 | Sa. | 14 | 10. 59 | 206. 32 | 212. 7 | 6. 2 | 8. 23 |
| 10 | *Su.* | 15 | 11. 42 | 217. 45 | 223. 26 | 10. 38 | 12. 47 |
| 11 | M. | 16 | 12. 26 | 229. 12 | 235. 3 | 14. 49 | 16. 40 |
| 12 | Tu. | 17 | 13. 11 | 241. 1 | 247. 4 | 18. 22 | 19. 52 |
| 13 | W. | 18 | 13. 56 | 253. 14 | 259. 30 | 21. 10 | 22. 15 |
| 14 | Th. | 19 | 14. 47 | 265. 52 | 272. 19 | 23. 5 | 23. 39 |
| 15 | F. | 20 | 15. 38 | 278. 49 | 285. 22 | 23. 58 | 24. 0 |
| 16 | Sa. | 21 | 16. 28 | 291. 56 | 298. 31 | 23. 45 | 23. 14 |
| 17 | *Su.* | 22 | 17. 18 | 305. 5 | 311. 37 | 22. 26 | 21. 21 |
| 18 | M. | 23 | 18. 7 | 318. 7 | 324. 34 | 20. 1 | 18. 25 |
| 19 | Tu. | 24 | 18. 56 | 330. 58 | 337. 20 | 16. 35 | 14. 32 |
| 20 | W. | 25 | 19. 44 | 343. 41 | 350. 1 | 12. 17 | 9. 51 |
| 21 | Th. | 26 | 20. 33 | 356. 20 | 2. 42 | 7. 15 | 4. 31 S |
| 22 | F. | 27 | 21. 23 | 9. 8 | 15. 39 | 1. 42 S | 1. 12 N |
| 23 | Sa. | 28 | 22. 15 | 22. 16 | 29. 3 | 4. 8 N | 7. 3 |
| 24 | *Su.* | 29 | 23. 12 | 35. 59 | 43. 8 | 9. 54 | 12. 38 |
| 25 | M. | 1 | ♂ | 50. 29 | 58. 2 | 15. 12 | 17. 32 |
| 26 | Tu. | 2 | 0. 11 | 65. 48 | 73. 44 | 19. 34 | 21. 16 |
| 27 | W. | 3 | 1. 13 | 81. 49 | 89. 58 | 22. 35 | 23. 30 |
| 28 | Th. | 4 | 2. 17 | 98. 8 | 106. 14 | 23. 58 | 24. 1 |
| 29 | F. | 5 | 3. 19 | 114. 13 | 122. 1 | 23. 38 | 22. 52 |
| 30 | Sa. | 6 | 4. 18 | 129. 35 | 136. 54 | 21. 46 | 20. 19 |
| 31 | *Su.* | 7 | 5. 13 | 143. 57 | 150. 44 | 18. 38 | 16. 42 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Log. at Noon. | Proport. Log. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | F. | 16. 16 | 16. 9 | 59. 41 | 59. 17 | 4794 | 4823 |
| 2 | Sa. | 16. 3 | 15. 56 | 58. 54 | 58. 28 | 4852 | 4883 |
| 3 | *Su.* | 15. 50 | 15. 43 | 58. 5 | 57. 40 | 4912 | 4943 |
| 4 | M. | 15. 36 | 15. 30 | 57. 16 | 56. 55 | 4973 | 5000 |
| 5 | Tu. | 15. 25 | 15. 19 | 56. 34 | 56. 14 | 5027 | 5053 |
| 6 | W. | 15. 14 | 15. 10 | 55. 55 | 55. 40 | 5077 | 5097 |
| 7 | Th. | 15. 6 | 15. 2 | 55. 25 | 55. 11 | 5116 | 5134 |
| 8 | F. | 14. 59 | 14. 56 | 54. 59 | 54. 47 | 5150 | 5166 |
| 9 | Sa. | 14. 53 | 14. 51 | 54. 38 | 54. 30 | 5178 | 5189 |
| 10 | *Su.* | 14. 49 | 14. 47 | 54. 23 | 54. 17 | 5198 | 5206 |
| 11 | M. | 14. 46 | 14. 45 | 54. 13 | 54. 10 | 5211 | 5215 |
| 12 | Tu. | 14. 45 | 14. 45 | 54. 7 | 54. 7 | 5219 | 5219 |
| 13 | W. | 14. 45 | 14. 46 | 54. 8 | 54. 11 | 5218 | 5214 |
| 14 | Th. | 14. 47 | 14. 49 | 54. 14 | 54. 20 | 5210 | 5202 |
| 15 | F. | 14. 50 | 14. 52 | 54. 27 | 54. 37 | 5193 | 5179 |
| 16 | Sa. | 14. 56 | 15. 0 | 54. 48 | 55. 2 | 5165 | 5146 |
| 17 | *Su.* | 15. 4 | 15. 9 | 55. 17 | 55. 35 | 5127 | 5103 |
| 18 | M. | 15. 14 | 15. 20 | 55. 53 | 56. 16 | 5080 | 5050 |
| 19 | Tu. | 15. 26 | 15. 33 | 56. 39 | 57. 5 | 5021 | 4987 |
| 20 | W. | 15. 40 | 15. 48 | 57. 31 | 57. 58 | 4955 | 4921 |
| 21 | Th. | 15. 55 | 16. 3 | 58. 26 | 58. 55 | 4886 | 4850 |
| 22 | F. | 16. 11 | 16. 18 | 59. 22 | 59. 50 | 4817 | 4783 |
| 23 | Sa. | 16. 25 | 16. 31 | 60. 14 | 60. 37 | 4754 | 4727 |
| 24 | *Su.* | 16. 36 | 16. 40 | 60. 55 | 61. 12 | 4705 | 4685 |
| 25 | M. | 16. 43 | 16. 45 | 61. 22 | 61. 30 | 4673 | 4664 |
| 26 | Tu. | 16. 45 | 16. 44 | 61. 30 | 61. 27 | 4664 | 4668 |
| 27 | W. | 16. 42 | 16. 38 | 61. 19 | 61. 6 | 4677 | 4692 |
| 28 | Th. | 16. 34 | 16. 29 | 60. 49 | 60. 28 | 4712 | 4737 |
| 29 | F. | 16. 23 | 16. 16 | 60. 6 | 59. 40 | 4764 | 4795 |
| 30 | Sa. | 16. 8 | 16. 0 | 59. 14 | 58. 45 | 4827 | 4863 |
| 31 | *Su.* | 15. 53 | 15. 46 | 58. 17 | 57. 50 | 4897 | 4931 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Regulus. | 43. 42. 33 | 41. 56. 4 | 40. 10. 0 | 38. 24. 21 |
| 2 | | 29. 42. 37 | 27. 59. 36 | 26. 17. 5 | 24. 35. 6 |
| 3 | | 16. 14. 6 | | | |
| 3 | Spica ♍ | 70. 10. 7 | 68. 29. 50 | 66. 49. 57 | 65. 10. 24 |
| 4 | | 56. 58. 14 | 55. 20. 51 | 53. 43. 49 | 52. 7. 7 |
| 5 | | 44. 8. 50 | 42. 34. 12 | 40. 59. 56 | 39. 26. 0 |
| 6 | | 31. 42. 8 | 30. 10. 36 | 28. 39. 32 | 27. 8. 56 |
| 7 | Antares. | 64. 59. 22 | 63. 27. 33 | 61. 55. 55 | 60. 24. 29 |
| 8 | | 52. 50. 6 | 51. 19. 44 | 49. 49. 32 | 48. 19. 31 |
| 9 | | 40. 52. 13 | 39. 23. 16 | 37. 54. 32 | 36. 25. 59 |
| 10 | | 29. 6. 50 | | | |
| 10 | α Aquilæ. | 79. 9. 29 | 77. 53. 46 | 76. 38. 16 | 75. 22. 59 |
| 11 | | 69. 10. 32 | 67. 56. 57 | 66. 43. 42 | 65. 30. 48 |
| 12 | | 59. 32. 34 | 58. 22. 23 | 57. 12. 45 | 56. 3. 43 |
| 13 | Fomalhaut. | 77. 47. 5 | 76. 22. 10 | 74. 57. 18 | 73. 32. 28 |
| 14 | | 66. 28. 54 | 65. 4. 19 | 63. 39. 48 | 62. 15. 20 |
| 15 | | 55. 14. 11 | 53. 50. 14 | 52. 26. 25 | 51. 2. 43 |
| 16 | α Pegaſi. | 62. 54. 37 | 61. 34. 38 | 60. 14. 50 | 58. 55. 13 |
| 17 | | 52. 20. 28 | 51. 2. 27 | 49. 44. 47 | 48. 27. 34 |
| 18 | α Arietis. | 80. 52. 14 | 79. 21. 12 | 77. 49. 56 | 76. 18. 25 |
| 19 | | 68. 37. 4 | 67. 4. 2 | 65. 30. 46 | 63. 57. 14 |
| 17 | The Sun. | 114. 24. 20 | 112. 59. 38 | 111. 34. 42 | 110. 9. 32 |
| 18 | | 103. 0. 9 | 101. 33. 27 | 100. 6. 28 | 98. 39. 11 |
| 19 | | 91. 18. 9 | 89. 48. 57 | 88. 19. 23 | 86. 49. 29 |
| 20 | | 79. 14. 27 | 77. 42. 15 | 76. 9. 39 | 74. 36. 39 |
| 21 | | 66. 45. 32 | 65. 10. 2 | 63. 34. 5 | 61. 57. 43 |
| 22 | | 53. 49. 24 | 52. 10. 25 | 50. 31. 2 | 48. 51. 14 |
| 23 | | 40. 26. 1 | | | |
| 28 | Regulus. | 49. 19. 2 | 47. 27. 55 | 45. 37. 10 | 43. 46. 47 |
| 29 | | 34. 40. 56 | 32. 53. 6 | 31. 5. 47 | 29. 19. 0 |
| 30 | | 20. 33. 31 | | | |
| 30 | Spica ♍ | 74. 32. 56 | 72. 48. 30 | 71. 4. 29 | 69. 20. 56 |
| 31 | | 60. 49. 53 | 59. 9. 3 | 57. 28. 39 | 55. 48. 43 |
| J. 1 | | 47. 35. 40 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Regulus. | 36. 39. 7 | 34. 54. 20 | 33. 9. 58 | 31. 26. 5 |
| 2 | | 22. 53. 38 | 21. 12. 46 | 19. 32. 34 | 17. 53. 0 |
| 3 | Spica ♍ | 63. 31. 15 | 61. 52. 28 | 60. 14. 2 | 58. 35. 57 |
| 4 | | 50. 30. 46 | 48. 54. 46 | 47. 19. 7 | 45. 43. 48 |
| 5 | | 37. 52. 27 | 36. 19. 16 | 34. 46. 29 | 33. 14. 6 |
| 6 | | 25. 38. 48 | | | |
| 6 | Antares. | 71. 8. 31 | 69. 35. 57 | 68. 3. 34 | 66. 31. 22 |
| 7 | | 58. 53. 14 | 57. 22. 11 | 55. 51. 19 | 54. 20. 37 |
| 8 | | 46. 49. 41 | 45. 20. 3 | 43. 50. 35 | 42. 21. 19 |
| 9 | | 34. 57. 40 | 33. 29. 36 | 32. 1. 47 | 30. 34. 11 |
| 10 | ⍺ Aquilæ. | 74. 7. 59 | 72. 53. 12 | 71. 38. 42 | 70. 24. 29 |
| 11 | | 64. 18. 14 | 63. 6. 7 | 61. 54. 28 | 60. 43. 17 |
| 12 | | 54. 55. 16 | | | |
| 12 | Fomalhaut. | 83. 27. 9 | 82. 2. 4 | 80. 37. 2 | 79. 12. 4 |
| 13 | | 72. 7. 40 | 70. 42. 54 | 69. 18. 12 | 67. 53. 31 |
| 14 | | 60. 50. 56 | 59. 26. 37 | 58. 2. 23 | 56. 38. 14 |
| 15 | | 49. 39. 8 | | | |
| 15 | ⍺ Pegasi. | 68. 15. 41 | 66. 55. 17 | 65. 34. 57 | 64. 14. 44 |
| 16 | | 57. 35. 46 | 56. 16. 31 | 54. 57. 33 | 53. 38. 52 |
| 17 | | 47. 10. 46 | | | |
| 17 | ⍺ Arietis. | 86. 53. 54 | 85. 23. 51 | 83. 53. 34 | 82. 23. 1 |
| 18 | | 74. 46. 39 | 73. 14. 38 | 71. 42. 22 | 70. 9. 50 |
| 19 | | 62. 23. 28 | | | |
| 16 | The Sun. | 120. 1. 0 | 118. 37. 9 | 117. 13. 5 | 115. 48. 49 |
| 17 | | 108. 44. 9 | 107. 18. 32 | 105. 52. 40 | 104. 26. 32 |
| 18 | | 97. 11. 36 | 95. 43. 43 | 94. 15. 31 | 92. 47. 0 |
| 19 | | 85. 19. 13 | 83. 48. 36 | 82. 17. 36 | 80. 46. 13 |
| 20 | | 73. 3. 15 | 71. 29. 27 | 69. 55. 14 | 68. 20. 35 |
| 21 | | 60. 20. 55 | 58. 43. 41 | 57. 6. 1 | 55. 27. 56 |
| 22 | | 47. 10. 58 | 45. 30. 19 | 43. 49. 17 | 42. 7. 50 |
| 27 | Regulus. | 56. 46. 43 | 54. 54. 21 | 53. 2. 16 | 51. 10. 29 |
| 28 | | 41. 56. 46 | 40. 7. 10 | 38. 17. 58 | 36. 29. 14 |
| 29 | | 27. 32. 43 | 25. 47. 0 | 24. 1. 54 | 22. 17. 22 |
| 30 | Spica ♍ | 67. 37. 50 | 65. 55. 11 | 64. 12. 58 | 62. 31. 13 |
| 31 | | 54. 9. 12 | 52. 30. 9 | 50. 51. 33 | 49. 13. 24 |

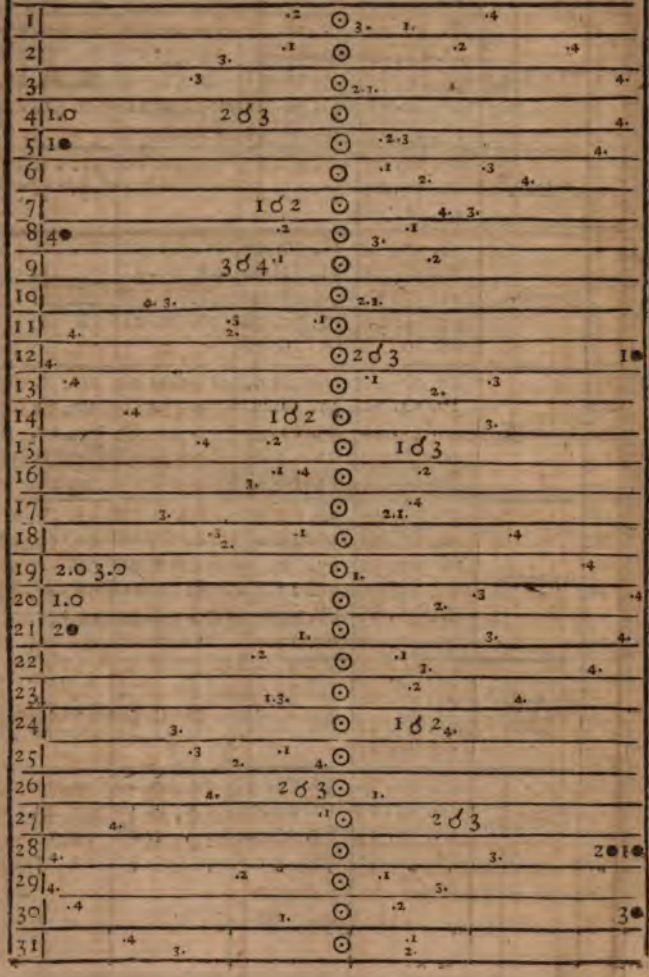
Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 61. 54. 43 | 63. 34. 9 | 65. 13. 12 | 66. 51. 53 |
| 2 | | 74. 59. 43 | 76. 36. 11 | 78. 12. 19 | 79. 48. 4 |
| 3 | The Sun. | 87. 41. 29 | 89. 15. 7 | 90. 48. 24 | 92. 21. 20 |
| 4 | | 100. 0. 56 | 101. 31. 54 | 103. 2. 33 | 104. 32. 55 |
| 5 | | 112. 0. 15 | 113. 28. 54 | 114. 57. 17 | 116. 25. 25 |
| 3 | | 20. 47. 21 | 22. 25. 45 | 24. 4. 4 | 25. 42. 18 |
| 4 | Pollux. | 33. 51. 29 | 35. 28. 46 | 37. 5. 50 | 38. 42. 40 |
| 5 | | 46. 43. 18 | 48. 18. 44 | 49. 53. 57 | 51. 28. 57 |
| 6 | | 23. 29. 46 | 25. 2. 37 | 26. 35. 25 | 28. 8. 10 |
| 7 | | 35. 50. 2 | 37. 22. 2 | 38. 53. 53 | 40. 25. 38 |
| 8 | Regulus. | 48. 2. 16 | 49. 33. 14 | 51. 4. 6 | 52. 34. 50 |
| 9 | | 60. 6. 49 | 61. 36. 55 | 63. 6. 56 | 64. 36. 52 |
| 10 | | 72. 5. 8 | | | |
| 10 | | 19. 3. 0 | 20. 27. 0 | 21. 51. 31 | 23. 16. 30 |
| 11 | | 30. 26. 48 | 31. 53. 33 | 33. 20. 24 | 34. 47. 24 |
| 12 | Spica ♍ | 42. 3. 42 | 43. 31. 11 | 44. 58. 43 | 46. 26. 18 |
| 13 | | 53. 44. 48 | 55. 12. 38 | 56. 40. 31 | 58. 8. 26 |
| 14 | | 65. 28. 48 | 66. 57. 3 | 68. 25. 23 | 69. 53. 47 |
| 15 | | 77. 16. 58 | | | |
| 15 | | 31. 34. 9 | 33. 1. 42 | 34. 29. 27 | 35. 57. 27 |
| 16 | | 43. 20. 55 | 44. 50. 16 | 46. 19. 48 | 47. 49. 34 |
| 17 | | 55. 21. 48 | 56. 52. 56 | 58. 24. 20 | 59. 56. 0 |
| 48 | Antares. | 67. 38. 10 | 69. 11. 27 | 70. 45. 2 | 72. 18. 55 |
| 19 | | 80. 13. 9 | 81. 48. 59 | 83. 25. 11 | 85. 1. 44 |
| 20 | | 93. 9. 59 | 94. 48. 48 | 96. 27. 59 | 98. 7. 35 |
| 21 | | 106. 31. 42 | | | |
| 21 | | 27. 24. 46 | 28. 46. 54 | 30. 11. 8 | 31. 37. 21 |
| 22 | Fomal- | 39. 13. 36 | 40. 48. 55 | 42. 25. 20 | 44. 2. 47 |
| 23 | haut. | 52. 23. 31 | 54. 5. 56 | 55. 49. 3 | 57. 32. 49 |
| 24 | | 66. 19. 56 | 68. 6. 47 | 69. 54. 1 | 71. 41. 37 |
| 29 | | 44. 2. 12 | 45. 43. 33 | 47. 24. 31 | 49. 5. 4 |
| 30 | The Sun. | 57. 21. 38 | 58. 59. 41 | 60. 37. 18 | 62. 14. 30 |
| 31 | | 70. 14. 0 | 71. 48. 37 | 73. 22. 50 | 74. 56. 39 |
| J. 1 | | 82. 39. 40 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 68. 30. 11 | 70. 8. 7 | 71. 45. 41 | 73. 22. 53 |
| 2 | | 81. 23. 28 | 82. 58. 30 | 84. 33. 11 | 86. 7. 30 |
| 3 | The Sun. | 93. 53. 57 | 95. 26. 11 | 96. 58. 5 | 98. 29. 40 |
| 4 | | 106. 2. 58 | 107. 32. 42 | 109. 2. 10 | 110. 31. 21 |
| 5 | | 117. 53. 17 | 119. 20. 54 | 120. 48. 15 | |
| 3 | | 27. 20. 27 | 28. 58. 28 | 30. 36. 18 | 32. 13. 59 |
| 4 | Pollux. | 40. 19. 17 | 41. 55. 38 | 43. 31. 44 | 45. 7. 38 |
| 5 | | 53. 3. 46 | | | |
| 5 | | 17. 18. 4 | 18. 50. 58 | 20. 23. 55 | 21. 56. 51 |
| 6 | | 29. 40. 52 | 31. 13. 20 | 32. 45. 42 | 34. 17. 55 |
| 7 | Regulus. | 41. 57. 14 | 43. 28. 41 | 45. 0. 0 | 46. 31. 12 |
| 8 | | 54. 5. 28 | 55. 35. 58 | 57. 6. 21 | 58. 36. 38 |
| 9 | | 66. 6. 42 | 67. 36. 26 | 69. 6. 4 | 70. 35. 38 |
| 10 | | 24. 41. 55 | 26. 7. 44 | 27. 33. 49 | 29. 0. 11 |
| 11 | | 36. 14. 32 | 37. 41. 42 | 39. 8. 58 | 40. 36. 17 |
| 12 | Spica ♍ | 47. 53. 56 | 49. 21. 36 | 50. 49. 18 | 52. 17. 2 |
| 13 | | 59. 36. 24 | 61. 4. 25 | 62. 32. 29 | 64. 0. 37 |
| 14 | | 71. 22. 15 | 72. 50. 48 | 74. 19. 26 | 75. 48. 10 |
| 15 | | 37. 25. 42 | 38. 54. 11 | 40. 22. 53 | 41. 51. 48 |
| 16 | | 49. 19. 33 | 50. 49. 45 | 52. 20. 12 | 53. 50. 52 |
| 17 | Antares. | 61. 27. 54 | 63. 0. 3 | 64. 32. 29 | 66. 5. 11 |
| 18 | | 73. 53. 7 | 75. 27. 38 | 77. 2. 29 | 78. 37. 39 |
| 19 | | 86. 38. 38 | 88. 15. 55 | 89. 53. 34 | 91. 31. 36 |
| 20 | | 99. 47. 34 | 101. 27. 58 | 103. 8. 47 | 104. 50. 2 |
| 21 | | 33. 5. 24 | 34. 35. 12 | 36. 6. 34 | 37. 39. 22 |
| 22 | Fomal- | 45. 41. 18 | 47. 20. 37 | 49. 0. 47 | 50. 41. 46 |
| 23 | haut. | 59. 17. 11 | 61. 2. 7 | 62. 47. 34 | 64. 33. 31 |
| 24 | | 73. 29. 32 | | | |
| 28 | | 37. 12. 56 | 38. 55. 49 | 40. 38. 20 | 42. 20. 27 |
| 29 | The Sun. | 50. 45. 13 | 52. 24. 57 | 54. 4. 16 | 55. 43. 9 |
| 30 | | 63. 51. 15 | 65. 27. 34 | 67. 3. 28 | 68. 38. 57 |
| 31 | | 76. 30. 2 | 78. 3. 1 | 79. 35. 37 | 81. 7. 49 |

## Configurations of the SATELLITES of JUPITER at 10 o'th' Clock at Night.



| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | M. | Nicomede. Easter T. ends. |
| 2 | Tu. | |
| 3 | W. | Cambridge Term ends. |
| 4 | Th. | K. Geo. III. born 1738. |
| 5 | F. | Boniface. B. Ern. Aug. born |
| 6 | Sa. | |
| 7 | *Su.* | *Whit-Sunday.* |
| 8 | M. | *Whit-Monday.* |
| 9 | Tu | *Whit-Tuesday.* |
| 10 | W. | *Prs. Amelia born.* |
| 11 | Th. | *St. Barnabas.* |
| 12 | F. | |
| 13 | Sa. | |
| 14 | *Su.* | *Trinity-Sunday.* |
| 15 | M. | On mor. of Holy Trin. 1 |
| 16 | Tu. | [ret. |
| 17 | W. | St. Alban. Oxf. T. begins. |
| 18 | Th. | |
| 19 | F. | Trinity Term begins. |
| 20 | Sa. | Transl. Ed. K. of W. Sax |
| 21 | *Su.* | *1st Sunday after Trinity.* |
| 22 | M. | In 8 days of H. T. 2 ret. |
| 23 | Tu. | |
| 24 | W. | *St. John Baptist.* |
| 25 | Th. | |
| 26 | F. | |
| 27 | Sa. | |
| 28 | *Su.* | *2d Sunday after Trinity.* |
| 29 | M. | [*St. Peter.* In 15 days of |
| 30 | Tu. | H. Trin. 3 ret. |

## Phases of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter — | 1. | 14. | 34 |
| Full Moon — | 9. | 15. | 50 |
| Last Quarter — | 17. | 12. | 25 |
| New Moon — | 24. | 3. | 37 |

## Other Phenomena.

D.

1. ☾ ☌ ☊ $19^h.58'$.
3. ☾ ☍ ♍ $1^h.51'$.
7. ☾ 4 ad ♌ ☍ $8^h.22'$.
   ☾ ♈ ☍ $8^h.35'$.
   ☾ ♉ ☍ $18^h.11'$.
8. ☾ ♈ ♏ $3^h.53'$.
   ☿ ☌ ♊ diff. Lat. 50′.
9. ☾ ☍ Ophiuchi $12^h.53'$.
14. ☾ ☌ ♆ $10^h.56'$. § Station
20. ☉ enters ♋ at $22^h.24'$.
22. ☾ ☌ ♉ $7^h.31'$.
    ☾ ☌ ♉ $20^h.49'$.
23. ☾ ☊ ♊ $23^h.17'$.
24. ☾ μ ♊ $2^h.14'$.
    ☉ eclipsed, visible.
25. ☾ ☿ $21^h.0'$.
26. ☾ ♈ ♋ $6^h.29'$.
27. ☾ ☊ ♌ $16^h.54'$.
29. ☾ ☌ ♌ $3^h.39'$.
30. ☾ ☍ ♍ $8^h.52'$.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Afc. in Time. | Sun's Declin. North. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | M. | 2. 10. 57. 43 | 4.37.32,3 | 22. 6. 52 | 2. 38,4 | 9,2 |
| 2 | Tu. | 2. 11. 55. 9 | 4.41.38,0 | 22. 14. 44 | 2. 29,2 | 9,5 |
| 3 | W. | 2. 12. 52. 34 | 4.45.44,1 | 22. 22. 12 | 2. 19,7 | 9,8 |
| 4 | Th. | 2. 13. 49. 56 | 4 49.50,5 | 22. 29. 17 | 2. 9,9 | 10,1 |
| 5 | F. | 2. 14. 47. 18 | 4.53.57,2 | 22. 35. 58 | 1. 59,8 | 10,5 |
| 6 | Sa. | 2. 15. 44. 39 | 4.58. 4,3 | 22. 42. 16 | 1. 49,3 | 10,8 |
| 7 | *Su.* | 2. 16. 41. 59 | 5. 2.11,7 | 22. 48. 10 | 1. 38,5 | 11,0 |
| 8 | M. | 2. 17. 39. 18 | 5. 6.19,3 | 22. 53. 40 | 1. 27,5 | 11,3 |
| 9 | Tu. | 2. 18. 36. 36 | 5.10.27,2 | 22. 58. 46 | 1. 16,2 | 11,6 |
| 10 | W. | 2. 19. 33. 53 | 5.14.35,3 | 23. 3. 27 | 1. 4,6 | 11,8 |
| 11 | Th. | 2. 20. 31. 10 | 5.18.43,7 | 23. 7. 44 | 0. 52,8 | 12,0 |
| 12 | F. | 2. 21. 28. 26 | 5.22.52,3 | 23. 11. 37 | 0. 40,8 | 12,2 |
| 13 | Sa. | 2. 22. 25. 42 | 5.27. 1,1 | 23. 15. 6 | 0. 28,6 | 12,4 |
| 14 | *Su.* | 2. 23. 22. 58 | 5.31.10,1 | 23. 18. 10 | 0. 16,2 | 12,5 |
| 15 | M. | 2. 24. 20. 13 | 5.35.19,2 | 23. 20. 49 | 0. 3,7 | 12,7 |
| 16 | Tu. | 2. 25. 17. 28 | 5.39.28,5 | 23. 23. 4 | Ad: 9,0 | 12,9 |
| 17 | W. | 2. 26. 14. 44 | 5.43.37,9 | 23. 24. 54 | 0. 21,9 | 12,9 |
| 18 | Th. | 2. 27. 11. 59 | 5.47.47,4 | 23. 26. 19 | 0. 34,8 | 13,0 |
| 19 | F. | 2. 28. 9. 14 | 5.51.57,0 | 23. 27. 20 | 0. 47,8 | 13,0 |
| 20 | Sa. | 2. 29. 6. 29 | 5.56. 6,6 | 23. 27. 55 | 1. 0,8 | 13,0 |
| 21 | *Su.* | 3. 0. 3. 44 | 6. 0.16,3 | 23. 28. 6 | 1. 13,8 | 13,1 |
| 22 | M. | 3. 1. 0. 58 | 6. 4.25,9 | 23. 27. 51 | 1. 26,9 | 13,0 |
| 23 | Tu. | 3. 1. 58. 13 | 6. 8.35,5 | 23. 27. 13 | 1. 39,9 | 12,9 |
| 24 | W. | 3. 2. 55. 28 | 6.12.45,0 | 23. 26. 9 | 1. 52,8 | 12,9 |
| 25 | Th. | 3. 3. 52. 42 | 6.16.54,4 | 23. 24. 41 | 2. 5,7 | 12,7 |
| 26 | F. | 3. 4. 49. 56 | 6.21. 3,8 | 23. 22. 48 | 2. 18,4 | 12,6 |
| 27 | Sa. | 3. 5. 47. 10 | 6.25.12,9 | 23. 20. 30 | 2. 31,0 | 12,4 |
| 28 | *Su.* | 3. 6. 44. 24 | 6.29.21,9 | 23. 17. 47 | 2. 43,4 | 12,2 |
| 29 | M. | 3. 7. 41. 37 | 6.33.30,7 | 23. 14. 40 | 2. 55,6 | 11,9 |
| 30 | Tu. | 3. 8. 38. 50 | 6.37.39,3 | 23. 11. 9 | 3. 7,5 | |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 15. 48, 8 | 1. 8, 3 | 2. 23, 6 | 0. 006367 | 3. 0. 43 |
| 7 | 15. 48, 1 | 1. 8, 6 | 2. 23, 3 | 0. 006666 | 3. 0. 24 |
| 13 | 15. 47, 5 | 1. 8, 7 | 2. 23, 2 | 0. 006913 | 3. 0. 4 |
| 19 | 15. 47, 1 | 1. 8, 8 | 2. 23, 0 | 0. 007111 | 2. 29. 45 |
| 25 | 15. 46, 9 | 1. 8, 8 | 2. 23, 0 | 0. 007226 | 2. 29. 26 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Emerſions. | | II. Satellite. Emerſions. | | III. Satellite. | | |
|---|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. | |
| 1 | 0. 0. 3 | 1 | 2. 8. 43 | 6 | 12. 1. 55 | I |
| 2 | 18. 28. 23 | 4 | 15. 26. 52 | 6 | 15. 27. 50 | E |
| 4 | 12. 56. 46 | 8 | 4. 45. 1 | 13 | 15. 59. 40 | I |
| 6 | 7. 25. 8 | 11 | 18. 2. 58 | 13 | 19. 25. 6 | E |
| 8 | 1. 53. 23 | 15 | 7. 20. 54 | 20 | 19. 57. 20 | I |
| 9 | 20. 21. 43 | 18 | 20. 38. 48 | 20 | 23. 22. 13 | E |
| 11 | 14. 49. 57 | 22 | 9. 56. 43 | 27 | 23. 54. 56 | I |
| 13 | 9. 18. 15 | 25 | 23. 14. 45 | 28 | 3. 19. 15 | E |
| 15 | 3. 46. 30 | 29 | 12. 32. 45 | | | |
| 16 | 22. 14. 46 | | | IV. Satellite. | | |
| 18 | 16. 43. 2 | | | | | |
| 20 | 11. 11. 18 | | | 11 | 9*53. 57 | I |
| 22 | 5. 39. 30 | | | 11 | 14. 25. 50 | E |
| 24 | 0. 7. 47 | | | 28 | 3. 50. 43 | I |
| 25 | 18. 36. 3 | | | 28 | 8. 20. 8 | E |
| 27 | 13. 4. 16 | | | | | |
| 29 | 7. 32. 30 | | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Paſſage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| | **MERCURY.** Inf. ☌ 1ᵈ. 16ʰ½. great. elong. 26ᵈ | | | | | |
| 1 | 8. 9. 42 | 2. 50 S | 2. 12. 2 | 2. 24 S | 19. 52 N | 0. 6 |
| 7 | 8. 26. 14 | 4. 32 | 2. 8. 54 | 3. 43 | 18. 8 | 23. 24 |
| 13 | 9. 13. 23 | 5. 54 | 2. 7. 22 | 4. 18 | 17. 20 | 22. 55 |
| 19 | 10. 1. 59 | 6. 47 | 2. 8. 25 | 4. 8 | 17. 39 | 22. 36 |
| 25 | 10. 23. 2 | 6. 56 | 2. 12. 14 | 3. 24 | 18. 55 | 22. 28 |
| | **VENUS.** | | | | | |
| 1 | 3. 25. 1 | 2. 12 N | 2. 29. 1 | 0. 59 N | 24. 27 N | 1. 18 |
| 7 | 4. 4. 46 | 2. 36 | 3. 6. 21 | 1. 11 | 24. 30 | 1. 26 |
| 13 | 4. 14. 31 | 2. 56 | 3. 13. 40 | 1. 21 | 24. 6 | 1. 33 |
| 19 | 4. 24. 16 | 3. 11 | 3. 20. 58 | 1. 29 | 23. 18 | 1. 40 |
| 25 | 5. 4. 2 | 3. 20 | 3. 28. 15 | 1. 35 | 22. 5 | 1. 46 |
| | **MARS.** ☌ 3ᵈ. 3ʰ¼. | | | | | |
| 1 | 2. 11. 55 | 0. 45 N | 2. 11. 32 | 0. 27 N | 22. 38 N | 0. 2 |
| 7 | 2. 14. 59 | 0. 50 | 2. 15. 40 | 0. 30 | 23. 12 | 23. 54 |
| 13 | 2. 18. 1 | 0. 55 | 2. 19. 45 | 0. 33 | 23. 38 | 23. 47 |
| 19 | 2. 21. 2 | 1. 0 | 2. 23. 50 | 0. 36 | 23. 56 | 23. 40 |
| 25 | 2. 24. 1 | 1. 5 | 2. 27. 54 | 0. 39 | 24. 6 | 23. 33 |
| | **JUPITER.** | | | | | |
| 1 | 5. 0. 37 | 1. 2 N | 4. 20. 28 | 0. 59 N | 15. 37 N | 4. 55 |
| 7 | 5. 1. 5 | 1. 3 | 4. 21. 17 | 0. 59 | 15. 21 | 4. 33 |
| 13 | 5. 1. 33 | 1. 3 | 4. 22. 11 | 0. 58 | 15. 4 | 4. 12 |
| 19 | 5. 2. 1 | 1. 4 | 4. 23. 8 | 0. 58 | 14. 45 | 3. 51 |
| 25 | 5. 2. 29 | 1. 4 | 4. 24. 9 | 0. 58 | 14. 24 | 3. 30 |
| | **SATURN.** | | | | | |
| 1 | 7. 12. 58 | 2. 20 N | 7. 9. 56 | 2. 33 N | 12. 23 N | 9. 54 |
| 7 | 7. 13. 9 | 2. 20 | 7. 9. 36 | 2. 32 | 12. 18 | 9. 28 |
| 13 | 7. 13. 20 | 2. 19 | 7. 9. 19 | 2. 31 | 12. 14 | 9. 2 |
| 19 | 7. 13. 31 | 2. 19 | 7. 9. 5 | 2. 30 | 12. 10 | 8. 36 |
| 25 | 7. 13. 43 | 2. 19 | 7. 8. 52 | 2. 28 | 12. 8 | 8. 11 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | M. | 5. 3. 35. 53 | 5. 10. 9. 19 | 4. 44. 5 N | 4.58. 2 N |
| 2 | Tu. | 5. 16. 37. 17 | 5. 23. 0. 10 | 5. 8. 2 | 5.14. 4 |
| 3 | W. | 5. 29. 18. 21 | 6. 5. 32. 22 | 5. 16. 12 | 5.14.34 |
| 4 | Th. | 6. 11. 42. 32 | 6. 17. 49. 24 | 5. 9. 18 | 5. 0.34 |
| 5 | F. | 6. 23. 53. 21 | 6. 29. 54. 49 | 4. 48. 31 | 4.33.22 |
| 6 | Sa. | 7. 5. 54. 13 | 7. 11. 51. 54 | 4. 15. 16 | 3.54.29 |
| 7 | *Su.* | 7. 17. 48. 15 | 7. 23. 43. 35 | 3. 31. 14 | 3. 5.46 |
| 8 | M. | 7. 29. 38. 16 | 8. 5. 32. 32 | 2. 38. 19 | 2. 9.14 |
| 9 | Tu. | 8. 11. 26. 44 | 8. 17. 21. 6 | 1. 38. 43 | 1. 7. 7 |
| 10 | W. | 8. 23. 15. 58 | 8. 29. 11. 33 | 0. 34. 44 N | 0. 1.53 N |
| 11 | Th. | 9. 5. 8. 9 | 9. 11. 6. 4 | 0. 31. 4 S | 1. 3.50 S |
| 12 | F. | 9. 17. 5. 36 | 9. 23. 7. 2 | 1. 36. 2 | 2. 7.21 |
| 13 | Sa. | 9. 29. 10. 45 | 10. 5. 17. 4 | 2. 37. 26 | 3. 5.56 |
| 14 | *Su.* | 10. 11. 26. 20 | 10. 17. 38. 56 | 3. 32. 30 | 3.56.50 |
| 15 | M. | 10. 23. 55. 15 | 11. 0. 15. 39 | 4. 18. 34 | 4.37.23 |
| 16 | Tu. | 11. 6. 40. 31 | 11. 13. 10. 12 | 4. 52. 58 | 5. 5. 2 |
| 17 | W. | 11. 19. 45. 2 | 11. 26. 25. 18 | 5. 13. 17 | 5.17.26 |
| 18 | Th. | 0. 3. 11. 13 | 0. 10. 2. 57 | 5. 17. 17 | 5.12.39 |
| 19 | F. | 0. 17. 0. 35 | 0. 24. 4. 3 | 5. 3. 24 | 4.49.28 |
| 20 | Sa. | 1. 1. 13. 17 | 1. 8. 27. 54 | 4. 30. 52 | 4. 7.46 |
| 21 | *Su.* | 1. 15. 47. 34 | 1. 23. 11. 36 | 3. 40. 20 | 3. 8.56 |
| 22 | M. | 2. 0. 39. 19 | 2. 8. 9. 50 | 2. 34. 8 | 1.56.24 |
| 23 | Tu. | 2. 15. 42. 10 | 2. 23. 15. 13 | 1. 16. 30 S | 0.35.12 S |
| 24 | W. | 3. 0. 47. 51 | 3. 8. 18. 52 | 0. 6. 43 N | 0.48.21 N |
| 25 | Th. | 3. 15. 47. 19 | 3. 23. 12. 3 | 1. 28. 54 | 2. 7.37 |
| 26 | F. | 4. 0. 32. 10 | 4. 7. 46. 59 | 2. 43. 45 | 3.16.50 |
| 27 | Sa. | 4. 14. 55. 50 | 4. 21. 58. 20 | 3. 46. 19 | 4.11.56 |
| 28 | *Su.* | 4. 28. 54. 15 | 5. 5. 43. 28 | 4. 33. 24 | 4.50.39 |
| 29 | M. | 5. 12. 26. 4 | 5. 19. 2. 13 | 5. 3. 34 | 5.12. 6 |
| 30 | Tu. | 5. 25. 32. 10 | 6. 1. 56. 21 | 5. 16. 46 | 5.17.16 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declination at Noon. | ☽'s Declination at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | M. | 8 | 6. 3 | 157. 17 | 163. 36 | 14. 36 N | 12. 22 N |
| 2 | Tu. | 9 | 6. 49 | 169. 43 | 175. 40 | 10. 1 | 7. 35 |
| 3 | W. | 10 | 7. 33 | 181. 28 | 187. 10 | 5. 7 | 2. 36 N |
| 4 | Th. | 11 | 8. 15 | 192. 47 | 198. 21 | 0. 7 N | 2. 22 S |
| 5 | F. | 12 | 8. 57 | 203. 53 | 209. 26 | 4. 48 S | 7. 11 |
| 6 | Sa. | 13 | 9. 38 | 215. 1 | 220. 39 | 9. 29 | 11. 41 |
| 7 | *Su.* | 14 | 10. 22 | 226. 21 | 232. 7 | 13. 47 | 15. 43 |
| 8 | M. | 15 | 11. 6 | 238. 2 | 244. 2 | 17. 31 | 19. 8 |
| 9 | Tu. | 16 | 11. 53 | 250. 8 | 256. 22 | 20. 33 | 21. 45 |
| 10 | W. | 17 | 12. 41 | 262. 42 | 269. 7 | 22. 43 | 23. 26 |
| 11 | Th. | 18 | 13. 31 | 275. 37 | 282. 10 | 23. 53 | 24. 4 |
| 12 | F. | 19 | 14. 21 | 288. 45 | 295. 21 | 23. 58 | 23. 35 |
| 13 | Sa. | 20 | 15. 11 | 301. 55 | 308. 28 | 22. 55 | 21. 58 |
| 14 | *Su.* | 21 | 16. 0 | 314. 57 | 321. 22 | 20. 46 | 19. 19 |
| 15 | M. | 22 | 16. 48 | 327. 44 | 334. 3 | 17. 37 | 15. 43 |
| 16 | Tu. | 23 | 17. 35 | 340. 17 | 346. 29 | 13. 36 | 11. 19 |
| 17 | W. | 24 | 18. 22 | 352. 39 | 358. 50 | 8. 52 | 6. 16 |
| 18 | Th. | 25 | 19. 9 | 5. 2 | 11. 17 | 3. 35 S | 0. 48 S |
| 19 | F. | 26 | 19. 58 | 17. 37 | 24. 4 | 2. 1 N | 4. 51 N |
| 20 | Sa. | 27 | 20. 51 | 30. 39 | 37. 25 | 7. 41 | 10. 26 |
| 21 | *Su.* | 28 | 21. 47 | 44. 25 | 51. 37 | 13. 4 | 15. 33 |
| 22 | M. | 29 | 22. 47 | 59. 3 | 66. 44 | 17. 48 | 19. 47 |
| 23 | Tu. | 30 | 23. 50 | 74. 37 | 82. 41 | 21. 26 | 22. 42 |
| 24 | W. | 1 | ♂ | 90. 52 | 99. 6 | 23. 35 | 24. 1 |
| 25 | Th. | 2 | 0. 55 | 107. 19 | 115. 26 | 24. 0 | 23. 34 |
| 26 | F. | 3 | 1. 58 | 123. 23 | 131. 6 | 22. 43 | 21. 31 |
| 27 | Sa. | 4 | 2. 55 | 138. 35 | 145. 46 | 19. 59 | 18. 10 |
| 28 | *Su.* | 5 | 3. 49 | 152. 42 | 159. 21 | 16. 8 | 13. 55 |
| 29 | M. | 6 | 4. 38 | 165. 47 | 171. 59 | 11. 34 | 9. 7 |
| 30 | Tu. | 7 | 5. 24 | 178. 1 | 183. 53 | 6. 37 | 4. 4 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | M. | 15. 38 | 15. 32 | 57. 23 | 57. 0 | 4965 | 4994 |
| 2 | Tu. | 15. 25 | 15. 19 | 56. 33 | 56. 11 | 5028 | 5056 |
| 3 | W. | 15. 13 | 15. 8 | 55. 49 | 55. 30 | 5085 | 5110 |
| 4 | Th. | 15. 3 | 14. 59 | 55. 14 | 54. 59 | 5130 | 5150 |
| 5 | F. | 14. 55 | 14. 52 | 54. 46 | 54. 35 | 5167 | 5182 |
| 6 | Sa. | 14. 50 | 14. 48 | 54. 26 | 54. 19 | 5194 | 5203 |
| 7 | *Su.* | 14. 46 | 14. 46 | 54. 13 | 54. 10 | 5211 | 5215 |
| 8 | M. | 14. 45 | 14. 45 | 54. 8 | 54. 6 | 5218 | 5221 |
| 9 | Tu. | 14. 45 | 14. 45 | 54. 8 | 54. 9 | 5210 | 5217 |
| 10 | W. | 14. 47 | 14. 48 | 54. 14 | 54. 17 | 5210 | 5206 |
| 11 | Th. | 14. 49 | 14. 51 | 54. 23 | 54. 30 | 5198 | 5189 |
| 12 | F. | 14. 54 | 14. 56 | 54. 39 | 54. 49 | 5177 | 5163 |
| 13 | Sa. | 14. 59 | 15. 3 | 55. 0 | 55. 14 | 5149 | 5130 |
| 14 | *Su.* | 15. 7 | 15. 11 | 55. 27 | 55. 43 | 5114 | 5093 |
| 15 | M. | 15. 16 | 15. 21 | 56. 1 | 56. 20 | 5069 | 5045 |
| 16 | Tu. | 15. 26 | 15. 31 | 56. 40 | 57. 2 | 5019 | 4991 |
| 17 | W. | 15. 39 | 15. 45 | 57. 25 | 57. 48 | 4962 | 4933 |
| 18 | Th. | 15. 52 | 15. 59 | 58. 13 | 58. 38 | 4902 | 4871 |
| 19 | F. | 16. 5 | 16. 12 | 59. 2 | 59. 28 | 4842 | 4810 |
| 20 | Sa. | 16. 18 | 16. 24 | 59. 51 | 60. 13 | 4782 | 4755 |
| 21 | *Su.* | 16. 30 | 16. 34 | 60. 33 | 60. 49 | 4732 | 4712 |
| 22 | M. | 16. 38 | 16. 40 | 61. 2 | 61. 12 | 4697 | 4685 |
| 23 | Tu. | 16. 42 | 16. 42 | 61. 17 | 61. 17 | 4679 | 4679 |
| 24 | W. | 16. 41 | 16. 39 | 61. 13 | 61. 4 | 4684 | 4694 |
| 25 | Th. | 16. 35 | 16. 30 | 60. 51 | 60. 34 | 4710 | 4730 |
| 26 | F. | 16. 25 | 16. 18 | 60. 13 | 59. 50 | 4755 | 4783 |
| 27 | Sa. | 16. 11 | 16. 4 | 59. 24 | 58. 57 | 4815 | 4848 |
| 28 | *Su.* | 15. 56 | 15. 48 | 58. 29 | 58. 1 | 4882 | 4917 |
| 29 | M. | 15. 41 | 15. 33 | 57. 32 | 57. 5 | 4953 | 4987 |
| 30 | Tu. | 15. 26 | 15. 20 | 56. 39 | 56. 15 | 5021 | 5051 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Spica ♍ | 47. 35. 40 | 45. 58. 25 | 44. 21. 37 | 42. 45. 15 |
| 2 | | 34. 50. 21 | 33. 16. 46 | 31. 43. 44 | 30. 11. 15 |
| 3 | | 22. 37. 59 | | | |
| 3 | Antares. | 67. 59. 27 | 66. 26. 42 | 64. 54. 13 | 63. 22. 0 |
| 4 | | 55. 44. 39 | 54. 13. 53 | 52. 43. 21 | 51. 13. 2 |
| 5 | | 43. 44. 40 | 42. 15. 37 | 40. 46. 45 | 39. 18. 7 |
| 6 | | 31. 58. 13 | | | |
| 6 | α Aquilæ. | 81. 35. 41 | 80. 20. 0 | 79. 4. 29 | 77. 49. 10 |
| 7 | | 71. 35. 52 | 70. 21. 57 | 69. 8. 21 | 67. 55. 3 |
| 8 | | 61. 53. 49 | | | |
| 8 | β Capricorni. | 61. 12. 27 | 59. 44. 38 | 58. 16. 51 | 56. 49. 5 |
| 9 | | 49. 30. 42 | 48. 3. 7 | 46. 35. 34 | 45. 8. 4 |
| 10 | | 37. 51. 14 | | | |
| 10 | Fomalhaut. | 69. 16. 49 | 67. 51. 49 | 66. 26. 52 | 65. 2. 1 |
| 11 | | 57. 58. 31 | 56. 34. 2 | 55. 9. 39 | 53. 45. 23 |
| 12 | | 46. 46. 22 | | | |
| 12 | α Pegaſi. | 65. 31. 34 | 64. 11. 16 | 62. 51. 6 | 61. 31. 6 |
| 13 | | 54. 54. 20 | 53. 35. 50 | 52. 17. 41 | 50. 59. 56 |
| 14 | α Arietis. | 83. 51. 5 | 82. 21. 9 | 80. 51. 2 | 79. 20. 45 |
| 15 | | 71. 46. 51 | 70. 15. 33 | 68. 44. 6 | 67. 12. 29 |
| 16 | | 59. 31. 59 | 57. 59. 26 | 56. 26. 45 | 54. 53. 57 |
| 17 | | 47. 8. 36 | 45. 35. 25 | 44. 2. 15 | 42. 29. 9 |
| 15 | The Sun. | 120. 19. 16 | 118. 51. 51 | 117. 24. 11 | 115. 56. 16 |
| 16 | | 108. 32. 45 | 107. 3. 14 | 105. 33. 24 | 104. 3. 17 |
| 17 | | 96. 28. 4 | 94. 56. 3 | 93. 23. 42 | 91. 51. 1 |
| 18 | | 84. 2. 18 | 82. 27. 29 | 80. 52. 16 | 79. 16. 42 |
| 19 | | 71. 13. 13 | 69. 35. 23 | 67. 57. 10 | 66. 18. 34 |
| 20 | | 57. 59. 53 | 56. 19. 3 | 54. 37. 50 | 52. 56. 18 |
| 21 | | 44. 23. 24 | 42. 39. 52 | 40. 56. 2 | 39. 11. 56 |
| 26 | Spica ♍ | 80. 19. 45 | 78. 31. 9 | 76. 42. 55 | 74. 55. 5 |
| 27 | | 66. 2. 13 | 64. 16. 58 | 62. 32. 9 | 60. 47. 49 |
| 28 | | 52. 13. 12 | 50. 31. 44 | 48. 50. 45 | 47. 10. 18 |
| 29 | | 38. 55. 40 | | | |
| 29 | Antares. | 84. 40. 45 | 83. 2. 7 | 81. 23. 54 | 79. 46. 7 |
| 30 | | 71. 43. 9 | 70. 7. 42 | 68. 32. 37 | 66. 57. 53 |
| J. 1 | | 59. 9. 29 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

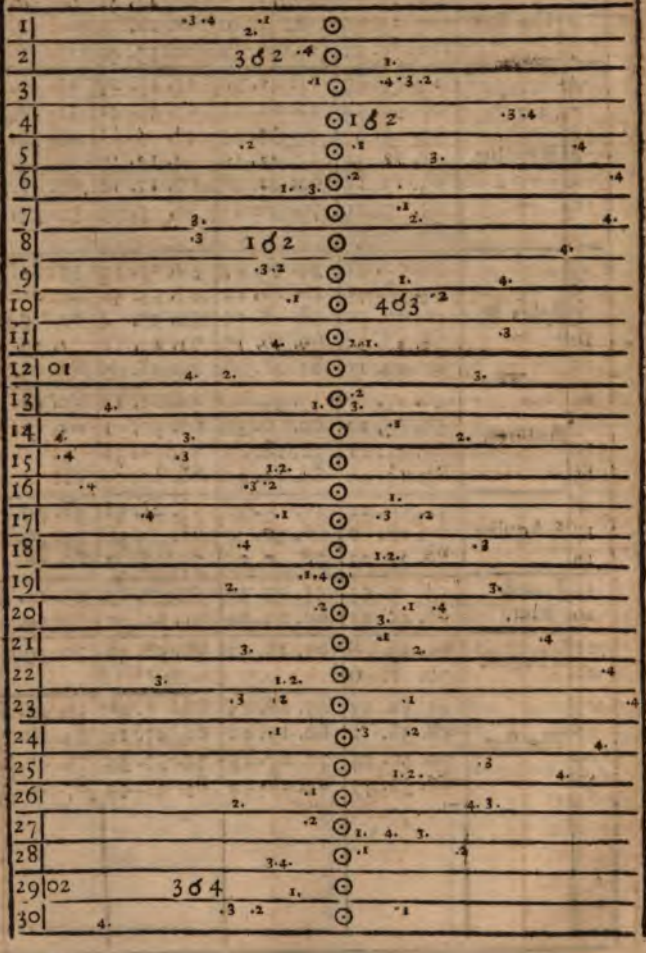
| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | Spica ♍ | 41. 9. 20 | 39. 33. 52 | 37. 58. 53 | 36. 24. 23 |
| 2 | | 28. 39. 19 | 27. 8. 1 | 25. 37. 20 | 24. 7. 19 |
| 3 | | 61. 50. 2 | 60. 18. 19 | 58. 46. 51 | 57. 15. 38 |
| 4 | Antares. | 49. 42. 56 | 48. 13. 3 | 46. 43. 23 | 45. 13. 55 |
| 5 | | 37. 49. 42 | 36. 21. 30 | 34. 53. 31 | 33. 25. 45 |
| 6 | | 76. 34. 2 | 75. 19. 7 | 74. 4. 27 | 72. 50. 2 |
| 7 | α Aquilæ. | 66. 42. 4 | 65. 29. 26 | 64. 17. 10 | 63. 5. 18 |
| 8 | β Capri- | 55. 21. 21 | 53. 53. 39 | 52. 25. 58 | 50. 58. 19 |
| 9 | corni. | 43. 40. 36 | 42. 13. 11 | 40. 45. 49 | 39. 18. 30 |
| 10 | Fomal- | 63. 37. 13 | 62. 12. 26 | 60. 47. 43 | 59. 23. 5 |
| 11 | haut. | 52. 21. 15 | 50. 57. 16 | 49. 33. 27 | 48. 9. 49 |
| 12 | | 60. 11. 16 | 58. 51. 38 | 57. 32. 16 | 56. 13. 10 |
| 13 | α Pegasi. | 49. 42. 34 | | | |
| 13 | | 89. 49. 13 | 88. 19. 55 | 86. 50. 27 | 85. 20. 51 |
| 14 | | 77. 50. 19 | 76. 19. 42 | 74. 48. 55 | 73. 17. 58 |
| 15 | α Arietis. | 65. 40. 42 | 64. 8. 45 | 62. 36. 38 | 61. 4. 23 |
| 16 | | 53. 21. 3 | 51. 48. 2 | 50. 14. 56 | 48. 41. 48 |
| 17 | | 40. 56. 4 | | | |
| 15 | | 114. 28. 6 | 112. 59. 40 | 111. 30. 58 | 110. 2. 0 |
| 16 | | 102. 32. 53 | 101. 2. 10 | 99. 31. 7 | 97. 59. 45 |
| 17 | The Sun. | 90. 17. 59 | 88. 44. 36 | 87. 10. 51 | 85. 36. 45 |
| 18 | | 77. 40. 46 | 76. 4. 27 | 74. 27. 45 | 72. 50. 40 |
| 19 | | 64. 39. 36 | 63. 0. 14 | 61. 20. 29 | 59. 40. 22 |
| 20 | | 51. 14. 23 | 49. 32. 8 | 47. 49. 33 | 46. 6. 38 |
| 25 | | 87. 37. 37 | 85. 47. 38 | 83. 57. 59 | 82. 8. 40 |
| 26 | Spica ♍ | 73. 7. 39 | 71. 20. 39 | 69. 34. 4 | 67. 47. 56 |
| 27 | | 59. 3. 56 | 57. 20. 32 | 55. 37. 36 | 53. 55. 10 |
| 28 | | 45. 30. 18 | 43. 50. 51 | 42. 11. 56 | 40. 33. 33 |
| 29 | Antares. | 78. 8. 44 | 76. 31. 45 | 74. 55. 10 | 73. 18. 58 |
| 30 | | 65. 23. 31 | 63. 49. 30 | 62. 15. 49 | 60. 42. 29 |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 82. 39. 41 | 84. 11. 5 | 85. 42. 8 | 87. 12. 49 |
| 2 | | 94. 41. 0 | 96. 9. 37 | 97. 37. 56 | 99. 5. 56 |
| 3 | | 106. 21. 30 | 107. 47. 48 | 109. 13. 52 | 110. 39. 40 |
| 4 | | 117. 45. 15 | | | |
| 2 | Regulus. | 20. 23. 24 | 21. 57. 24 | 23. 31. 19 | 25. 5. 9 |
| 3 | | 32. 51. 48 | 34. 24. 32 | 35. 57. 5 | 37. 29. 26 |
| 4 | | 45. 8. 21 | 46. 39. 35 | 48. 10. 39 | 49. 41. 34 |
| 5 | | 57. 13. 47 | 58. 43. 49 | 60. 13. 44 | 61. 43. 32 |
| 6 | | 69. 10. 59 | 70. 40. 12 | 72. 9. 20 | 73. 38. 25 |
| 7 | | 81. 2. 53 | 82. 31. 38 | 84. 0. 20 | 85. 29. 1 |
| 8 | Spica ♍ | 39. 9. 24 | 40. 36. 35 | 42. 3. 52 | 43. 31. 14 |
| 9 | | 50. 49. 13 | 52. 17. 1 | 53. 44. 53 | 55. 12. 49 |
| 10 | | 62. 33. 36 | 64. 1. 58 | 65. 30. 24 | 66. 58. 55 |
| 11 | | 74. 22. 40 | 75. 51. 40 | 77. 20. 46 | 78. 49. 58 |
| 12 | | 86. 17. 25 | | | |
| 12 | Antares. | 40. 27. 49 | 41. 56. 55 | 43. 26. 12 | 44. 55. 41 |
| 13 | | 52. 25. 48 | 53. 56. 22 | 55. 27. 7 | 56. 58. 3 |
| 14 | | 64. 35. 38 | 66. 7. 45 | 67. 40. 4 | 69. 12. 36 |
| 15 | | 76. 58. 38 | 78. 32. 32 | 80. 6. 42 | 81. 41. 7 |
| 16 | | 89. 37. 5 | | | |
| 16 | α Aquilæ. | 50. 0. 22 | 51. 11. 9 | 52. 23. 5 | 53. 36. 11 |
| 17 | | 59. 57. 12 | 61. 16. 11 | 62. 36. 0 | 63. 56. 35 |
| 18 | | 70. 50. 40 | 72. 15. 28 | 73. 40. 51 | 75. 6. 49 |
| 19 | | 82. 24. 40 | | | |
| 19 | Fomal-haut. | 47. 37. 0 | 49. 14. 9 | 50. 52. 2 | 52. 30. 38 |
| 20 | | 60. 53. 14 | 62. 35. 28 | 64. 18. 13 | 66. 1. 28 |
| 21 | | 74. 44. 33 | | | |
| 21 | α Pegasi. | 59. 7. 10 | 60. 44. 8 | 62. 21. 49 | 64. 0. 10 |
| 22 | | 72. 20. 22 | 74. 1. 48 | 75. 43. 36 | 77. 25. 43 |
| 27 | The Sun. | 39. 17. 49 | 40. 56. 54 | 42. 35. 33 | 44. 13. 47 |
| 28 | | 52. 18. 17 | 53. 53. 52 | 55. 29. 2 | 57. 3. 45 |
| 29 | | 64. 50. 46 | 66. 22. 54 | 67. 54. 38 | 69. 25. 59 |
| 30 | | 76. 56. 43 | 78. 25. 45 | 79. 54. 26 | 81. 22. 46 |
| J. 1 | | 88. 39. 26 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 88. 43. 10 | 90. 13. 8 | 91. 42. 45 | 93. 12. 3 |
| 2 | The Sun. | 110. 33. 37 | 102. 1. 0 | 103. 28. 7 | 104. 54. 57 |
| 3 | | 112. 5. 14 | 113. 30. 34 | 114. 55. 40 | 116. 20. 34 |
| 1 | | 14. 7. 47 | 15. 41. 34 | 17. 15. 27 | 18. 49. 24 |
| 2 | | 26. 38. 54 | 28. 12. 24 | 29. 45. 42 | 31. 18. 51 |
| 3 | | 39. 1. 37 | 40. 33. 35 | 42. 5. 21 | 43. 36. 57 |
| 4 | Regulus. | 51. 12. 18 | 52. 42. 53 | 54. 13. 19 | 55. 43. 37 |
| 5 | | 63. 13. 13 | 64. 42. 48 | 66. 12. 18 | 67. 41. 41 |
| 6 | | 75. 7. 25 | 76. 36. 21 | 78. 5. 15 | 79. 34. 6 |
| 7 | | 86. 57. 40 | | | |
| 7 | | 33. 21. 41 | 34. 48. 27 | 36. 15. 19 | 37. 42. 19 |
| 8 | | 44. 58. 41 | 46. 26. 12 | 47. 53. 48 | 49. 21. 29 |
| 9 | Spica ♍ | 56. 40. 50 | 58. 8. 55 | 59. 37. 4 | 61. 5. 18 |
| 10 | | 68. 27. 30 | 69. 56. 10 | 71. 24. 55 | 72. 53. 45 |
| 11 | | 80. 19. 15 | 81. 48. 38 | 83. 18. 7 | 84. 47. 43 |
| 12 | | 46. 25. 20 | 47. 55. 10 | 49. 25. 12 | 50. 55. 25 |
| 13 | Antares. | 58. 29. 11 | 60. 0. 30 | 61. 32. 1 | 63. 3. 44 |
| 14 | | 70. 45. 21 | 72. 18. 20 | 73. 51. 32 | 75. 24. 58 |
| 15 | | 83. 15. 46 | 84. 50. 41 | 86. 25. 53 | 88. 1. 21 |
| 16 | | 54. 50. 22 | 56. 5. 38 | 57. 21. 51 | 58. 39. 3 |
| 17 | α Aquilæ. | 65. 18. 0 | 66. 40. 9 | 68. 2. 58 | 69. 26. 29 |
| 18 | | 76. 33. 21 | 78. 0. 25 | 79. 28. 1 | 80. 56. 7 |
| 19 | Fomal- | 54. 9. 55 | 55. 49. 51 | 57. 30. 23 | 59. 11. 31 |
| 20 | haut. | 67. 45. 12 | 69. 29. 24 | 71. 14. 2 | 72. 59. 5 |
| 21 | α Pegasi. | 65. 39. 8 | 67. 18. 42 | 68. 58. 46 | 70. 39. 20 |
| 22 | | 79. 8. 6 | | | |
| 27 | | 45. 51. 33 | 47. 28. 53 | 49. 5. 47 | 50. 42. 16 |
| 28 | The Sun. | 58. 38. 1 | 60. 11. 50 | 61. 45. 14 | 63. 18. 13 |
| 29 | | 70. 56. 54 | 72. 27. 25 | 73. 57. 34 | 75. 27. 20 |
| 30 | | 82. 50. 45 | 84. 18. 24 | 85. 45. 44 | 87. 12. 45 |

## Configurations of the SATELLITES of JUPITER at Half an Hour paſt 9 o' th' Clock in the Evening.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | W. | |
| 2 | Th. | Visitation of B.V.Mary. |
| 3 | F. | |
| 4 | Sa. | |
| 5 | *Su.* | *3d Sunday after Trinity.* |
| 6 | M. | |
| 7 | Tu. | Camb. Commencement. |
| 8 | W. | *Trin. Term ends* |
| 9 | Th. | |
| 10 | F. | Camb. Term ends. |
| 11 | Sa. | |
| 12 | *Su.* | *4th Sunday after Trinity.* |
| 13 | M. | |
| 14 | Tu. | |
| 15 | W. | Swithin. |
| 16 | Th. | Oxford Act. |
| 17 | F. | |
| 18 | Sa. | Oxford Term ends. |
| 19 | *Su.* | *5th Sunday after Trinity.* |
| 20 | M. | Margaret. |
| 21 | Tu. | |
| 22 | W. | *Q. of Denmark born* 1751. |
| 23 | Th. | [Magdalen. |
| 24 | F. | |
| 25 | Sa. | *St. James.* |
| 26 | *Su.* | *6th Sunday after Trinity.* |
| 27 | M. | [St. Anne. |
| 28 | Tu. | |
| 29 | W. | |
| 30 | Th. | |
| 31 | F. | |

Phases of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| First Quarter — | 1. | 2. | 48 |
| Full Moon — | 9. | 6. | 46 |
| Last Quarter— | 16. | 19. | 43 |
| New Moon — | 23. | 11. | 7 |
| First Quarter — | 30. | 17. | 42 |

D. Other Phenomena.

4. ☾ 4 ad ζ 14h. 35′.
☾ ν ☌ 19h. 20′.
☾ γ ☌ 14h. 47′.
5. ☾ θ ☌ 0h. 23′.
☾ γ ♍ Im. 9h. 22′. * ⅔′ S. of ☽'s center.
Em. 10h. 45′. *3′ ½ North.
6. ☾ ρ Ophiuchi 19h. 7′.
8. ☿ ☍ ☊ diff. Lat. 29′.
11. ☾ ε ♈ 16h. 30′.
13. ♂ ☿ ♂ diff. Lat. 36′.
17. ☾ 2 ξ Ceti 12h. 58′.
19. ☾ ε ♉ 16h. 21′.
20. ☾ ι ♉ 6h. 3′.
♂ ♀ ♈ diff. Lat. 34′.
21. ☾ ν ♊ 9h. 9′.
☾ μ ♊ 12h. 10′.
22. ☉ enters ♌ at 9h. 7′.
☾ δ 10h. 48′.
23. ☾ γ ☍ 16h. 6′.
25. ☾ ν ☊ 4h. 30′.
26. ☾ ι ☊ 14h. 55′.
27. ☾ ο ♏ 17h. 24′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Afc. in Time. | Sun's Declin. North. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | W. | 3. 9. 36. 2 | 6. 41. 47,4 | 23. 7.13 | 3. 19,3 | 11,4 |
| 2 | Th. | 3. 10. 33. 14 | 6. 45. 55,5 | 23. 2.53 | 3. 30. 7 | 11,1 |
| 3 | F. | 3. 11. 30. 27 | 6. 50. 3,3 | 22.58. 9 | 3. 41,8 | 10,8 |
| 4 | Sa. | 3. 12. 27. 39 | 6. 54. 10,7 | 22.53. 1 | 3. 52,6 | 10,5 |
| 5 | *Su.* | 3. 13. 24. 50 | 6. 58. 17,7 | 22.47.29 | 4. 3,1 | 10,1 |
| 6 | M. | 3. 14. 22. 1 | 7. 2. 24,4 | 22.41.33 | 4. 13,2 | 9,8 |
| 7 | Tu. | 3. 15. 19. 13 | 7. 6. 30,8 | 22.35.14 | 4. 23,0 | 9,3 |
| 8 | W. | 3. 16. 16. 25 | 7. 10. 36,8 | 22.28.31 | 4. 32,3 | 9,0 |
| 9 | Th. | 3. 17. 13. 35 | 7. 14. 42,3 | 22.21.25 | 4. 41,3 | 8,6 |
| 10 | F. | 3. 18. 10. 47 | 7. 18. 47,4 | 22.13.56 | 4. 49,9 | 8,1 |
| 11 | Sa. | 3. 19. 7. 59 | 7. 22. 52,1 | 22. 6. 4 | 4. 58,0 | 7,6 |
| 12 | *Su.* | 3. 20. 5. 11 | 7. 26. 56,4 | 21 57.48 | 5. 5,7 | 7,3 |
| 13 | M. | 3. 21. 2. 24 | 7. 31. 0,2 | 21.49.12 | 5. 13,0 | 6,9 |
| 14 | Tu. | 3. 21. 59. 38 | 7. 35. 3,7 | 21.40.12 | 5. 19,9 | 6,3 |
| 15 | W. | 3. 22. 56. 53 | 7. 39. 6,6 | 21.30.50 | 5. 26,2 | 5,9 |
| 16 | Th. | 3. 23. 54. 8 | 7. 43. 9,0 | 21.21. 5 | 5. 32,1 | 5,3 |
| 17 | F. | 3. 24. 51. 24 | 7. 47. 11,0 | 21.10.59 | 5. 37,4 | 4,9 |
| 18 | Sa. | 3. 25. 48. 41 | 7. 51. 12,4 | 21. 0 31 | 5. 42,3 | 4,3 |
| 19 | *Su.* | 3. 26. 45. 59 | 7. 55. 13,4 | 20.49 42 | 5. 46,6 | 3,9 |
| 20 | M. | 3. 27. 43. 17 | 7. 59. 13,8 | 20.38.32 | 5. 50,5 | 3,3 |
| 21 | Tu. | 3. 28. 40. 37 | 8. 3. 13,7 | 20.27. 1 | 5. 53,8 | 2,8 |
| 22 | W. | 3. 29. 37. 57 | 8. 7. 13,0 | 20.15. 9 | 5. 56,6 | 2,2 |
| 23 | Th. | 4. 0. 35. 18 | 8. 11. 11,8 | 20. 2.57 | 5. 58,8 | 1,7 |
| 24 | F. | 4. 1. 32. 40 | 8. 15. 10,0 | 19.50.24 | 6. 0,5 | 1,0 |
| 25 | Sa. | 4. 2. 30. 3 | 8. 19. 7,6 | 19.37.32 | 6. 1,5 | 0,5 |
| 26 | *Su.* | 4. 3. 27. 26 | 8. 23. 4,6 | 19.24.20 | 6. 2,0 | 0,1 |
| 27 | M. | 4. 4. 24. 50 | 8. 27. 1,0 | 19.10.49 | 6. 1,9 | 0,8 |
| 28 | Tu. | 4. 5. 22. 15 | 8. 30. 56,8 | 18.56.58 | 6. 1,1 | 1,4 |
| 29 | W. | 4. 6. 19. 40 | 8. 34. 52,0 | 18.42.49 | 5. 59,7 | 2,0 |
| 30 | Th. | 4. 7. 17. 5 | 8. 38. 46,5 | 18.28.22 | 5. 57,7 | 2,6 |
| 31 | F. | 4. 8. 14. 30 | 8. 42. 40,4 | 18.13.37 | 5. 55,1 | |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 15. 46, 9 | 1. 8, 6 | 2. 23, 0 | 0. 007241 | 2. 29. 7 |
| 7 | 15. 47, 0 | 1. 8, 4 | 2. 23, 0 | 0. 007179 | 2. 28. 48 |
| 13 | 15. 47, 2 | 1. 8, 0 | 2. 23, 1 | 0. 007067 | 2. 28. 29 |
| 19 | 15. 47, 6 | 1. 7, 6 | 2. 23, 2 | 0. 006897 | 2. 28. 10 |
| 25 | 15. 48, 2 | 1. 7, 1 | 2. 23, 4 | 0. 006645 | 2. 27. 51 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Emerſions. | | II. Satellite. Emerſions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 1 | 2. 0. 49 | 3 | 1. 50. 41 | 5 | 3. 52. 36 I. |
| 2 | 20. 29. 3 | 6 | 15. 8. 44 | 5 | 7. 16. 27 E. |
| 4 | 14. 57. 22 | 10 | 4. 26. 40 | 12 | 7. 50. 32 I. |
| 6 | 9*25. 39 | 13 | 17. 44. 47 | 12 | 11. 13. 50 E. |
| 8 | 3. 54. 0 | 17 | 7. 2. 57 | 19 | 11. 48. 50 I. |
| 9 | 22. 22. 18 | 20 | 20. 21. 12 | 19 | 15. 11. 36 E. |
| 11 | 16. 50. 41 | 24 | 9*39 29 | | |
| 13 | 11. 19. 7 | | | IV. Satellite. | |
| 15 | 5. 47. 27 | | | | |
| 17 | 0. 15. 55 | | | 14 | 21. 48. 15 I. |
| 18 | 18. 44. 20 | | | 15 | 2. 14. 43 E. |
| 20 | 13. 12. 51 | | | | |
| 22 | 7. 41. 17 | | | | |
| 24 | 2. 9. 51 | | | | |
| 25 | 20. 38. 25 | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** Sup. ☌ 24d. 8h. | | | | | | |
| 1 | 11. 17. 45 | 5. 57 S | 2. 18. 38 | 2. 18 S | 20. 41 N | 22. 30 |
| 7 | 0. 17. 23 | 3. 21 S | 2. 27. 25 | 1. 2 S | 22. 25 | 22. 46 |
| 13 | 1. 22. 12 | 0. 46 N | 3. 8. 18 | 0. 12 N | 23. 24 | 23. 10 |
| 19 | 2. 29. 53 | 4. 52 | 3. 20. 36 | 1. 10 | 23. 3 | 23. 40 |
| 25 | 4. 5. 44 | 6. 53 | 4. 3. 17 | 1. 41 | 21. 5 | 0. 5 |
| **VENUS.** | | | | | | |
| 1 | 5. 13. 46 | 3. 23 N | 4. 5. 31 | 1. 39 N | 20. 30 N | 1. 51 |
| 7 | 5. 23. 30 | 3. 19 | 4. 12. 46 | 1. 40 | 18. 36 | 1. 56 |
| 13 | 6. 3. 13 | 3. 13 | 4. 20. 1 | 1. 38 | 16. 23 | 2. 1 |
| 19 | 6. 12. 54 | 2. 59 | 4. 27. 13 | 1. 33 | 13. 54 | 2. 5 |
| 25 | 6. 22. 34 | 2. 40 | 5. 4. 26 | 1. 26 | 11. 14 | 2. 8 |
| **MARS.** | | | | | | |
| 1 | 2. 26. 58 | 1. 9 N | 3. 1. 56 | 0. 43 N | 24. 10 N | 23. 26 |
| 7 | 2. 29. 54 | 1. 14 | 3. 5. 56 | 0. 45 | 24. 6 | 23. 19 |
| 13 | 3. 2. 48 | 1. 18 | 3. 9. 55 | 0. 48 | 23. 56 | 23. 12 |
| 19 | 3. 5. 41 | 1. 21 | 3. 13. 51 | 0. 51 | 23. 36 | 23. 6 |
| 25 | 3. 8. 32 | 1. 25 | 3. 17. 48 | 0. 53 | 23. 11 | 22. 58 |
| **JUPITER.** | | | | | | |
| 1 | 5. 2. 56 | 1. 4 N | 4. 25. 12 | 0. 56 N | 14. 2 N | 3. 9 |
| 7 | 5. 3. 25 | 1. 5 | 4. 26. 18 | 0. 56 | 13. 38 | 2. 49 |
| 13 | 5. 3. 51 | 1. 5 | 4. 27. 27 | 0. 56 | 13. 14 | 2. 29 |
| 19 | 5. 4. 19 | 1. 5 | 4. 28. 38 | 0. 56 | 12. 50 | 2. 9 |
| 25 | 5. 4. 47 | 1. 6 | 4. 29. 50 | 0. 56 | 12. 25 | 1. 50 |
| **SATURN.** □ 31d | | | | | | |
| 1 | 7. 13. 54 | 2. 19 N | 7. 8. 45 | 2. 27 N | 12. 7 S | 7. 45 |
| 7 | 7. 14. 5 | 2. 19 | 7. 8. 41 | 2. 26 | 12. 8 | 7. 21 |
| 13 | 7. 14. 16 | 2. 18 | 7. 8. 40 | 2. 24 | 12. 10 | 6. 56 |
| 19 | 7. 14. 27 | 2. 18 | 7. 8. 42 | 2. 22 | 12. 12 | 6. 32 |
| 25 | 7. 14. 38 | 2. 18 | 7. 8. 47 | 2. 20 | 12. 14 | 6. 8 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | W. | 6. 8. 15. 9 | 6. 14. 29. 1 | 5. 13. 55 N | 5. 6. 53 N |
| 2 | Th. | 6. 20. 38. 38 | 6. 26. 44. 19 | 4. 56. 21 | 4. 42. 35 |
| 3 | F. | 7. 2. 46. 47 | 7. 8. 46. 31 | 4. 25. 49 | 4. 6. 14 |
| 4 | Sa. | 7. 14. 44. 8 | 7. 20. 40. 5 | 3. 44. 7 | 3. 19. 41 |
| 5 | *Su.* | 7. 26. 34. 57 | 8. 2. 29. 2 | 2. 53. 13 | 2. 24. 54 |
| 6 | M. | 8. 8. 23. 2 | 8. 14. 17. 16 | 1. 55. 6 | 1. 24. 2 |
| 7 | Tu. | 8. 20. 12. 11 | 8. 26. 8. 4 | 0. 52. 1 N | 0. 19. 23 N |
| 8 | W. | 9. 2. 5. 14 | 9. 8. 4. 8 | 0. 13. 37 S | 0. 46. 32 S |
| 9 | Th. | 9. 14. 4. 57 | 9. 20. 7. 52 | 1. 19. 8 | 1. 50. 59 |
| 10 | F. | 9. 26. 13. 6 | 10. 2. 20. 59 | 2. 21. 46 | 2. 51. 2 |
| 11 | Sa. | 10. 8. 31. 34 | 10. 14. 45. 6 | 3. 18. 39 | 3. 44. 2 |
| 12 | *Su.* | 10. 21. 1. 38 | 10. 27. 21. 29 | 4. 6. 55 | 4. 26. 58 |
| 13 | M. | 11. 3. 44. 41 | 11. 10. 11. 28 | 4. 43. 53 | 4. 57. 23 |
| 14 | Tu. | 11. 16. 41. 57 | 11. 23. 16. 13 | 5. 7. 10 | 5. 13. 2 |
| 15 | W. | 11. 29. 54. 26 | 0. 6. 36. 43 | 5. 14. 48 | 5. 12. 20 |
| 16 | Th. | 0. 13. 23. 5 | 0. 20. 13. 42 | 5. 5. 29 | 4. 54. 20 |
| 17 | F. | 0. 27. 8. 29 | 1. 4. 7. 32 | 4. 38. 41 | 4. 18. 49 |
| 18 | Sa. | 1. 11. 10. 36 | 1. 18. 17. 43 | 3. 54. 53 | 3. 27. 6 |
| 19 | *Su.* | 1. 25. 28. 35 | 2. 2. 42. 54 | 2. 55. 50 | 2. 21. 30 |
| 20 | M. | 2. 10. 0. 20 | 2. 17. 20. 18 | 1. 44. 40 | 1. 5. 51 S |
| 21 | Tu. | 2. 24. 42. 14 | 3. 2. 5. 23 | 0. 25. 49 S | 0. 14. 44 N |
| 22 | W. | 3. 9. 29. 0 | 3. 16. 52. 9 | 0. 55. 3 N | 1. 34. 19 |
| 23 | Th. | 3. 24. 13. 57 | 4. 1. 33. 27 | 2. 11. 56 | 2. 47. 6 |
| 24 | F. | 4. 8. 49. 48 | 4. 16. 2. 2 | 3. 19. 15 | 3. 47. 52 |
| 25 | Sa. | 4. 23. 9. 35 | 5. 0. 11. 43 | 4. 12. 37 | 4. 33. 9 |
| 26 | *Su.* | 5. 7. 8. 7 | 5. 13. 58. 20 | 4. 49. 22 | 5. 1. 10 |
| 27 | M. | 5. 20. 42. 17 | 5. 27. 19. 54 | 5. 8. 34 | 5. 11. 44 |
| 28 | Tu. | 6. 3. 51. 20 | 6. 10. 16. 49 | 5. 10. 47 | 5. 5. 53 |
| 29 | W. | 6. 16. 36. 42 | 6. 22. 51. 29 | 4. 57. 19 | 4. 45. 17 |
| 30 | Th. | 6. 29. 1. 26 | 7. 5. 7. 18 | 4. 30. 7 | 4. 12. 1 |
| 31 | F. | 7. 11. 9. 40 | 7. 17. 9. 1 | 3. 51. 16 | 3. 28. 11 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | W. | 8 | 6. 7 | 189. 38 | 195. 19 | 1. 32 N | 1. 0 S |
| 2 | Th. | 9 | 6. 49 | 200. 55 | 206. 31 | 3. 29 S | 5. 55 |
| 3 | F. | 10 | 7. 31 | 212. 6 | 217. 43 | 8. 17 | 10. 33 |
| 4 | Sa. | 11 | 8. 14 | 223. 24 | 229. 8 | 12. 42 | 14. 44 |
| 5 | *Su.* | 12 | 8. 58 | 234. 58 | 240. 54 | 16. 36 | 18. 18 |
| 6 | M. | 13 | 9. 44 | 246. 57 | 253. 8 | 19. 50 | 21. 9 |
| 7 | Tu. | 14 | 10. 32 | 259. 24 | 265. 48 | 22. 14 | 23. 5 |
| 8 | W. | 15 | 11. 21 | 272. 17 | 278. 50 | 23. 40 | 24. 0 |
| 9 | Th. | 16 | 12. 12 | 285. 27 | 292. 5 | 24. 2 | 23. 47 |
| 10 | F. | 17 | 13. 2 | 298. 41 | 305. 18 | 23. 15 | 22. 26 |
| 11 | Sa. | 18 | 13. 52 | 311. 53 | 318. 22 | 21. 21 | 20. 1 |
| 12 | *Su.* | 19 | 14. 41 | 324. 48 | 331. 9 | 18. 24 | 16. 35 |
| 13 | M. | 20 | 15. 28 | 337. 26 | 343. 38 | 14. 33 | 12. 21 |
| 14 | Tu. | 21 | 16. 14 | 349. 47 | 355. 54 | 9. 59 | 7. 28 |
| 15 | W. | 22 | 17. 1 | 2. 1 | 8. 8 | 4. 51 S | 2. 9 S |
| 16 | Th. | 23 | 17. 48 | 14. 17 | 20. 31 | 0. 36 N | 3. 21 N |
| 17 | F. | 24 | 18. 38 | 26. 52 | 33. 21 | 6. 8 | 8. 50 |
| 18 | Sa. | 25 | 19. 31 | 39. 59 | 46. 49 | 11. 28 | 13. 58 |
| 19 | *Su.* | 26 | 20. 27 | 53. 52 | 61. 8 | 16. 18 | 18. 25 |
| 20 | M. | 27 | 21. 27 | 68. 39 | 76. 21 | 20. 15 | 21. 46 |
| 21 | Tu. | 28 | 22. 31 | 84. 15 | 92. 18 | 22. 56 | 23. 42 |
| 22 | W. | 29 | 23. 34 | 100. 24 | 108. 31 | 24. 3 | 23. 58 |
| 23 | Th. | 1 | ♂ | 116. 33 | 124. 29 | 23. 27 | 22. 33 |
| 24 | F. | 2 | 0. 35 | 132. 13 | 139. 42 | 21. 17 | 19. 41 |
| 25 | Sa. | 3 | 1. 32 | 146. 57 | 153. 57 | 17. 47 | 15. 40 |
| 26 | *Su.* | 4 | 2. 24 | 160. 41 | 167. 12 | 13. 22 | 10. 56 |
| 27 | M. | 5 | 3. 14 | 173. 30 | 179. 38 | 8. 25 | 5. 49 |
| 28 | Tu. | 6 | 3. 59 | 185. 36 | 191. 27 | 3. 13 N | 0. 37 N |
| 29 | W. | 7 | 4. 42 | 197. 12 | 202. 54 | 1. 58 S | 4. 29 S |
| 30 | Th. | 8 | 5. 25 | 208. 35 | 214. 15 | 6. 56 | 9. 17 |
| 31 | F. | 9 | 6. 8 | 219. 57 | 225. 41 | 11. 32 | 13. 39 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | W. | 15. 14 | 15. 8 | 55. 52 | 55. 32 | 5081 | 5107 |
| 2 | Th. | 15. 3 | 14. 59 | 55. 14 | 54. 59 | 5130 | 5150 |
| 3 | F. | 14. 55 | 14. 52 | 54. 46 | 54. 34 | 5167 | 5183 |
| 4 | Sa. | 14. 50 | 14. 48 | 54. 25 | 54. 19 | 5195 | 5203 |
| 5 | *Su.* | 14. 47 | 14. 46 | 54. 15 | 54. 12 | 5209 | 5213 |
| 6 | M. | 14. 46 | 14. 46 | 54. 11 | 54. 12 | 5214 | 5213 |
| 7 | Tu. | 14. 47 | 14. 48 | 54. 17 | 54. 20 | 5206 | 5202 |
| 8 | W. | 14. 50 | 14. 52 | 54. 26 | 54. 33 | 5194 | 5185 |
| 9 | Th. | 14. 54 | 14. 57 | 54. 42 | 54. 51 | 5173 | 5161 |
| 10 | F. | 15. 0 | 15. 3 | 55. 2 | 55. 13 | 5146 | 5132 |
| 11 | Sa. | 15. 6 | 15. 9 | 55. 25 | 55. 37 | 5116 | 5100 |
| 12 | *Su.* | 15. 14 | 15. 18 | 55. 53 | 56. 7 | 5080 | 5062 |
| 13 | M. | 15. 22 | 15. 26 | 56. 23 | 56. 39 | 5041 | 5021 |
| 14 | Tu. | 15. 31 | 15. 36 | 56. 57 | 57. 14 | 4998 | 4976 |
| 15 | W. | 15. 41 | 15. 46 | 57. 33 | 57. 52 | 4952 | 4928 |
| 16 | Th. | 15. 51 | 15. 57 | 58. 11 | 58. 30 | 4905 | 4881 |
| 17 | F. | 16. 2 | 16. 7 | 58. 49 | 59. 8 | 4858 | 4834 |
| 18 | Sa. | 16. 12 | 16. 17 | 59. 26 | 59. 45 | 4812 | 4789 |
| 19 | *Su.* | 16. 21 | 16. 25 | 59. 59 | 60. 14 | 4772 | 4754 |
| 20 | M. | 16. 28 | 16. 30 | 60. 25 | 60. 34 | 4741 | 4730 |
| 21 | Tu. | 16. 32 | 16. 32 | 60. 39 | 60. 42 | 4724 | 4721 |
| 22 | W. | 16. 32 | 16. 30 | 60. 39 | 60. 34 | 4724 | 4730 |
| 23 | Th. | 16. 28 | 16. 24 | 60. 24 | 60. 11 | 4742 | 4758 |
| 24 | F. | 16. 20 | 16. 14 | 59. 55 | 59. 35 | 4777 | 4801 |
| 25 | Sa. | 16. 8 | 16. 2 | 59. 13 | 58. 49 | 4828 | 4858 |
| 26 | *Su.* | 15. 55 | 15. 48 | 58. 24 | 57. 58 | 4889 | 4921 |
| 27 | M. | 15. 41 | 15. 33 | 57. 32 | 57. 5 | 4953 | 4987 |
| 28 | Tu. | 15. 27 | 15. 20 | 56. 41 | 56. 17 | 5018 | 5049 |
| 29 | W. | 15. 14 | 15. 8 | 55. 56 | 55. 35 | 5076 | 5103 |
| 30 | Th. | 15. 4 | 14. 59 | 55. 17 | 55. 1 | 5127 | 5148 |
| 31 | F. | 14. 56 | 14. 53 | 54. 48 | 54. 37 | 5165 | 5179 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Antares. | 59. 9. 29 | 57. 36. 48 | 56. 4. 26 | 54. 32. 23 |
| 2 | | 46. 56. 31 | 45. 26. 10 | 43. 56. 6 | 42. 26. 19 |
| 3 | | 35. 1. 28 | 33. 33. 18 | 32. 5. 27 | 30. 37. 56 |
| 4 | | 23. 25. 33 | | | |
| 4 | α Aquilæ. | 74. 9. 25 | 72. 54. 56 | 71. 40. 43 | 70. 26. 46 |
| 5 | | 64. 21. 55 | 63. 10. 3 | 61. 58. 39 | 60. 47. 41 |
| 6 | | 55. 0. 22 | | | |
| 6 | Fomalhaut. | 83. 34. 15 | 82. 9. 10 | 80. 44. 4 | 79. 18. 56 |
| 7 | | 72. 13. 11 | 70. 48. 2 | 69. 22. 53 | 67. 57. 45 |
| 8 | | 60. 52. 22 | | | |
| 8 | α Pegaſi. | 79. 3. 45 | 77. 42. 21 | 76. 20. 57 | 74. 59. 32 |
| 9 | | 68. 13. 2 | 66. 51. 55 | 65. 30. 55 | 64. 10. 3 |
| 10 | | 57. 28. 2 | 56. 8. 19 | 54. 48. 50 | 53. 29. 41 |
| 11 | α Arietis. | 86. 40. 23 | 85. 10. 6 | 83. 39. 40 | 82. 9. 6 |
| 12 | | 74. 34. 9 | 73. 2. 46 | 71. 31. 15 | 69. 59. 37 |
| 13 | | 62. 19. 47 | 60. 47. 31 | 59. 15. 11 | 57. 42. 41 |
| 14 | Aldebaran. | 79. 34. 38 | 77. 56. 59 | 76. 19. 7 | 74. 41. 1 |
| 15 | | 66. 26. 56 | 64. 47. 23 | 63. 7. 35 | 61. 27. 32 |
| 16 | | 53. 3. 30 | 51. 21. 54 | 49. 40. 3 | 47. 57. 55 |
| 17 | | 39. 23. 34 | | | |
| 15 | The Sun. | 112. 56. 19 | 111. 23. 45 | 109. 50. 55 | 108. 17. 50 |
| 16 | | 100. 28. 32 | 98. 53. 50 | 97. 18. 51 | 95. 43. 36 |
| 17 | | 87. 43. 20 | 86. 6. 26 | 84. 29. 14 | 82. 51. 46 |
| 18 | | 74. 40. 18 | 73. 1. 10 | 71. 21. 44 | 69. 42. 4 |
| 19 | | 61. 19. 52 | 59. 38. 41 | 57. 57. 17 | 56. 15. 40 |
| 20 | | 47. 44. 24 | 46. 1. 36 | 44. 18. 40 | 42. 35. 35 |
| 25 | Spica ♍ | 57. 53. 5 | 56. 8. 18 | 54. 23. 53 | 52. 39. 53 |
| 26 | | 44. 6. 31 | 42. 25. 15 | 40. 44. 30 | 39. 4. 17 |
| 27 | | 30. 51. 28 | | | |
| 27 | Antares. | 76. 29. 11 | 74. 50. 17 | 73. 11. 46 | 71. 33. 40 |
| 28 | | 63. 29. 7 | 61. 53. 23 | 60. 18. 1 | 58. 43. 2 |
| 29 | | 50. 53. 37 | 49. 20. 47 | 47. 48. 18 | 46. 16. 10 |
| 30 | | 38. 40. 43 | 37. 10. 37 | 35. 40. 52 | 34. 11. 28 |
| 31 | | 26. 49. 57 | 25. 22. 48 | 23. 56. 15 | 22. 30. 20 |
| A. 1 | | 15. 32. 3 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 53. 0. 38 | 51. 29. 13 | 49. 58. 1 | 48. 27. 8 |
| 2 | Antares. | 40. 56. 48 | 39. 27. 32 | 37. 58. 34 | 36. 29. 53 |
| 3 | | 29. 10. 43 | 27. 43. 52 | 26. 17. 22 | 24. 51. 6 |
| 4 | | 69. 13. 7 | 67. 59. 47 | 66. 46. 48 | 65. 34. 11 |
| 5 | α Aquilæ. | 59. 37. 10 | 58. 27. 10 | 57. 17. 41 | 56. 8. 44 |
| 6 | Fomal- | 77. 53. 47 | 76. 28. 38 | 75. 3. 29 | 73. 38. 20 |
| 7 | haut. | 66. 32. 38 | 65. 7. 32 | 63. 42. 27 | 62. 17. 24 |
| 8 | | 73. 38. 9 | 72. 16. 47 | 70. 55. 29 | 69. 34. 14 |
| 9 | α Pegasi. | 62. 49. 16 | 61. 28. 39 | 60. 8. 15 | 58. 48. 3 |
| 10 | | 52. 10. 51 | | | |
| 10 | | 92. 40. 2 | 91. 10. 21 | 89. 40. 31 | 88. 10. 32 |
| 11 | | 80. 38. 23 | 79. 7. 31 | 77. 36. 32 | 76. 5. 25 |
| 12 | α Arietis. | 68. 27. 50 | 66. 55. 59 | 65. 24. 0 | 63. 51. 56 |
| 13 | | 56. 10. 18 | | | |
| 13 | | 86. 3. 1 | 84. 26. 15 | 82. 49. 15 | 81. 12. 3 |
| 14 | Aldeba- | 73. 2. 41 | 71. 24. 6 | 69. 45. 17 | 68. 6. 14 |
| 15 | ran. | 59. 47. 14 | 58. 6. 41 | 56. 25. 53 | 54. 44. 49 |
| 16 | | 46. 15. 32 | 44. 32. 55 | 42. 50. 2 | 41. 6. 56 |
| 14 | | 119. 4. 5 | 117. 32. 31 | 116. 0. 42 | 114. 28. 38 |
| 15 | | 106. 44. 30 | 105. 10. 55 | 103. 37. 3 | 102. 2. 56 |
| 16 | | 94. 8. 5 | 92. 32. 19 | 90. 56. 15 | 89. 19. 55 |
| 17 | The Sun. | 81. 14. 0 | 79. 35. 59 | 77. 57. 42 | 76. 19. 8 |
| 18 | | 68. 2. 8 | 66. 21. 56 | 64. 41. 30 | 63. 0. 48 |
| 19 | | 54. 33. 49 | 52. 51. 45 | 51. 9. 30 | 49. 27. 2 |
| 20 | | 40. 52. 23 | | | |
| 25 | Spica ♍ | 50. 56. 19 | 49. 13. 9 | 47. 30. 29 | 45. 48. 15 |
| 26 | | 37. 24. 35 | 35. 45. 27 | 34. 6. 52 | 32. 28. 52 |
| 27 | | 69. 55. 58 | 68. 18. 40 | 66. 41. 45 | 65. 5. 14 |
| 28 | | 57. 8. 25 | 55. 34. 11 | 54. 0. 18 | 52. 26. 47 |
| 29 | Antares. | 44. 44. 23 | 43. 12. 57 | 41. 41. 52 | 40. 11. 7 |
| 30 | | 32. 42. 25 | 31. 13. 41 | 29. 45. 21 | 28. 17. 27 |
| 31 | | 21. 5. 1 | 19. 40. 28 | 18. 16. 45 | 16. 53. 57 |

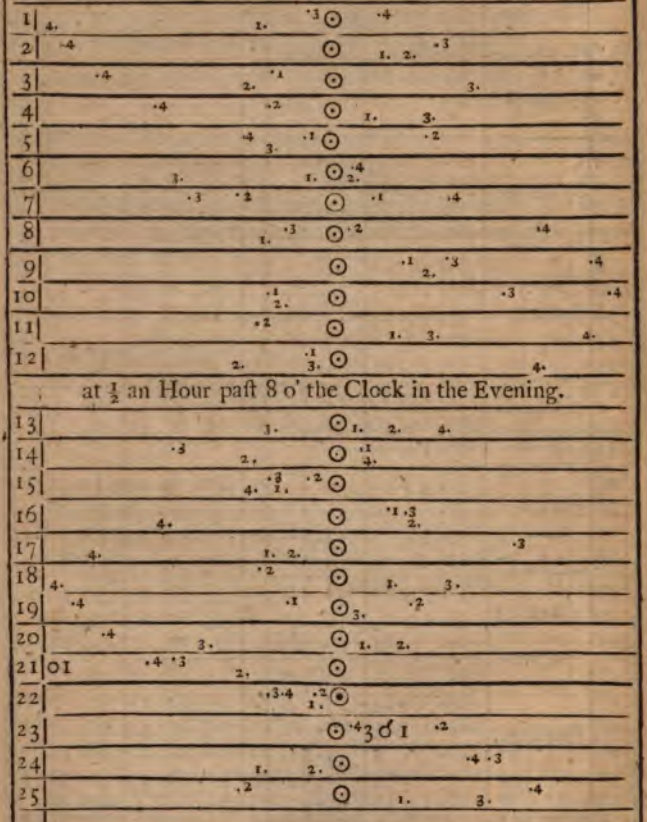
Diſtances of ☽ s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | The Sun. | 88. 39. 27 | 90. 5. 49 | 91. 31. 56 | 92. 57. 46 |
| 2 | | 100. 3. 7 | 101. 27. 28 | 102. 51. 36 | 104. 15. 32 |
| 3 | | 111. 12. 21 | 112. 35. 13 | 113. 57. 57 | 115. 20. 33 |
| 4 | | 122. 11. 52 | | | |
| 1 | Regulus. | 41. 43. 0 | 43. 16. 1 | 44. 48. 47 | 46. 21. 19 |
| 2 | | 54. 0. 27 | 55. 31. 36 | 57. 2. 32 | 58. 33. 18 |
| 3 | | 66. 4. 26 | 67. 34. 11 | 69. 3. 50 | 70. 33. 20 |
| 4 | | 77. 59. 15 | | | |
| 4 | Spica ♍ | 24. 39. 34 | 26. 5. 3 | 27. 30. 49 | 28. 56. 49 |
| 5 | | 36. 9. 32 | 37. 36. 26 | 39. 3. 26 | 40. 30. 32 |
| 6 | | 47. 47. 24 | 49. 15. 2 | 50. 42. 44 | 52. 10. 33 |
| 7 | | 59. 30. 56 | 60. 59. 18 | 62. 27. 45 | 63. 56. 18 |
| 8 | | 71. 20. 34 | | | |
| 8 | Antares. | 25. 45. 2 | 27. 12. 0 | 28. 39. 19 | 30. 6. 56 |
| 9 | | 37. 29. 37 | 38. 58. 53 | 40. 28. 23 | 41. 58. 7 |
| 10 | | 49. 29. 46 | 51. 0. 41 | 52. 31. 47 | 54. 3. 4 |
| 11 | | 61. 42. 16 | 63. 14. 38 | 64. 47. 12 | 66. 19. 58 |
| 12 | | 74. 6. 32 | 75. 40. 25 | 77. 14. 30 | 78. 48. 46 |
| 13 | | 86. 43. 3 | | | |
| 13 | β Capricorni. | 34. 3. 35 | 35. 37. 16 | 37. 11. 19 | 38. 45. 43 |
| 14 | | 46. 42. 46 | 48. 19. 7 | 49. 55. 46 | 51. 32. 42 |
| 15 | | 59. 41. 48 | 61. 20. 29 | 62. 59. 27 | 64. 38. 43 |
| 16 | Fomalhaut. | 44. 19. 5 | 45. 52. 26 | 47. 26. 31 | 49. 1. 15 |
| 17 | | 57. 3. 49 | 58. 41. 56 | 60. 20. 30 | 61. 59. 33 |
| 18 | | 70. 21. 6 | 72. 2. 35 | 73. 44. 25 | 75. 26. 36 |
| 19 | | 84. 2. 12 | | | |
| 19 | α Arietis. | 24. 29. 44 | 25. 58. 39 | 27. 29. 38 | 29. 2. 35 |
| 20 | | 37. 10. 38 | 38. 51. 35 | 40. 33. 22 | 42. 15. 56 |
| 21 | | 50. 57. 24 | 52. 43. 1 | 54. 28. 54 | 56. 15. 5 |
| 22 | | 65. 9. 13 | | | |
| 27 | The Sun. | 46. 30. 39 | 48. 2. 52 | 49. 34. 43 | 51. 6. 10 |
| 28 | | 58. 37. 41 | 60. 6. 53 | 61. 35. 44 | 63. 4. 14 |
| 29 | | 70. 21. 39 | 71. 48. 11 | 73. 14. 26 | 74. 40. 23 |
| 30 | | 81. 45. 53 | 83. 10. 13 | 84. 34. 20 | 85. 58. 14 |
| 31 | | 92. 54. 46 | 94. 17. 30 | 95. 40. 6 | 97. 2. 33 |
| A.1 | | 103. 53. 1 | | | |
| 31 | Spica ♍ | 21. 14. 8 | 22. 39. 21 | 24. 6. 0 | 25. 31. 4 |
| A.1 | | 32. 44. 30 | | | |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 94. 23. 20 | 95. 48. 38 | 97. 13. 42 | 98. 38. 32 |
| 2 | | 105. 39. 15 | 107. 2. 46 | 108. 26. 9 | 109. 49. 20 |
| 3 | | 116. 43. 1 | 118. 5. 22 | 119. 27. 38 | 120. 49. 48 |
| 1 | Regulus. | 47. 53. 36 | 49. 25. 39 | 50. 57. 28 | 52. 29. 4 |
| 2 | | 60. 3. 51 | 61. 34. 13 | 63. 4. 28 | 64. 34. 32 |
| 3 | | 72. 2. 43 | 73. 31. 59 | 75. 1. 10 | 76. 30. 15 |
| 4 | Spica ♍ | 30. 23. 2 | 31. 49. 27 | 33. 16. 0 | 34. 52. 40 |
| 5 | | 41. 57. 44 | 43. 25. 1 | 44. 52. 23 | 46. 19. 51 |
| 6 | | 53. 38. 26 | 55. 6. 25 | 56. 34. 30 | 58. 2. 40 |
| 7 | | 65. 24. 57 | 66. 53. 42 | 68. 22. 33 | 69. 51. 29 |
| 8 | Antares. | 31. 34. 54 | 33. 3. 10 | 34. 31. 43 | 36. 0. 31 |
| 9 | | 43. 28. 3 | 44. 58. 11 | 46. 28. 31 | 47. 59. 2 |
| 10 | | 55. 34. 33 | 57. 6. 12 | 58. 38. 2 | 60. 0. 3 |
| 11 | | 67. 53. 6 | 69. 26. 5 | 70. 59. 25 | 72. 32. 53 |
| 12 | | 80. 23. 15 | 81. 57. 55 | 83. 32. 46 | 85. 7. 40 |
| 13 | β Capricorni. | 40. 20. 28 | 41. 55. 34 | 43. 30. 59 | 45. 6. 43 |
| 14 | | 53. 9. 56 | 54. 47. 28 | 56. 25. 17 | 58. 3. 24 |
| 15 | | 66. 18. 15 | | | |
| 15 | Fomalhaut. | 38. 13. 52 | 39. 43. 50 | 41. 14. 44 | 42. 46. 30 |
| 16 | | 50. 36. 40 | 52. 12. 38 | 53. 4 . 8 | 55. 26. 11 |
| 17 | | 63. 39. 3 | 65. 18. 56 | 66. 59. 15 | 68. 37. 59 |
| 18 | | 77. 9. 7 | 78. 51. 57 | 80. 35. 5 | 82. 18. 30 |
| 19 | α Arietis. | 30. 37. 18 | 32. 13. 42 | 33. 51. 24 | 35. 30. 22 |
| 20 | | 43. 59. 13 | 45. 43. 1 | 47. 27. 20 | 49. 12. 9 |
| 21 | | 58. 1. 34 | 59. 48. 15 | 61. 35. 7 | 63. 22. 7 |
| 26 | The Sun. | 40. 17. 51 | 41. 51. 38 | 43. 25. 3 | 44. 58. 3 |
| 27 | | 52. 37. 14 | 54. 7. 54 | 55. 38. 12 | 57. 8. 8 |
| 28 | | 64. 32. 23 | 66. 0. 11 | 67. 27. 40 | 68. 54. 49 |
| 29 | | 76. 6. 3 | 77. 31. 24 | 78. 56. 29 | 80. 21. 18 |
| 30 | | 87. 21. 55 | 88. 45. 25 | 90. 8. 43 | 91. 31. 50 |
| 31 | | 98. 24. 51 | 99. 47. 3 | 101. 9. 8 | 102. 31. 8 |
| 30 | Spica ♍ | 15. 39. 38 | 17. 2. 8 | 18. 25. 26 | 19. 49. 23 |
| 31 | | 26. 57. 34 | 28. 24. 12 | 29. 50. 56 | 31. 17. 44 |

## Configurations of the SATELLITES of JUPITER at 9 o' th' Clock in the Evening.



at ½ an Hour past 8 o' the Clock in the Evening.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | Sa. | Lammas-Day. |
| 2 | *Su.* | *7th Sunday after Trinity.* |
| 3 | M. | |
| 4 | Tu. | |
| 5 | W. | |
| 6 | Th. | Transfig. of our Lord. |
| 7 | F. | Name of Jesus. |
| 8 | Sa. | |
| 9 | *Su.* | *8th Sunday after Trinity.* |
| 10 | M. | St. Lawrence. |
| 11 | Tu. | *Prs. of Brunswick born.* |
| 12 | W. | *Pr. of Wales born* 1762. |
| 13 | Th. | |
| 14 | F. | |
| 15 | Sa. | |
| 16 | *Su.* | *9th Sunday after Trinity.* |
| 17 | M. | [*Pr. Fred. born.* |
| 18 | Tu. | |
| 19 | W. | |
| 20 | Th. | |
| 21 | F. | *Pr. William Henry born.* |
| 22 | Sa. | |
| 23 | *Su.* | *10th Sunday after Trinity.* |
| 24 | M. | *St. Bartholomew.* |
| 25 | Tu. | |
| 26 | W. | |
| 27 | Th. | |
| 28 | F. | St. Auguſtine. |
| 29 | Sa. | *Beheading of St. John Bap.* |
| 30 | *Su.* | *11th Sunday after Trinity.* |
| 31 | M. | |

Phaſes of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| Full Moon — | 7. | 20. | 25 |
| Laſt Quarter — | 15. | 1. | 30 |
| New Moon — | 21. | 20. | 4 |
| Firſt Quarter — | 29. | 11. | 14 |

| D. | Other Phenomena. |
|---|---|
| 1. | ☾ ♓ ☌ 2h. 23′. |
| | ☾ ♑ ☌ 7h. 26′. |
| 3. | ☾ ☿ Serpentar. 2h. 8′. |
| | ♀ ☍ ☊ diff. Lat. 33′. |
| 7. | ☾ ♍ ☌ 22h. 58′. |
| 9. | ☾ 1 ad ☍ ♒ 23h. 22′. |
| 10. | ☾ 2 ad ☍ ♒ 0h. 11′. |
| | ☾ 3 ad ☍ ♒ 0h. 18′. |
| | ♀ ♎ ♏ diff. Lat. 9′. |
| | ☾ 33 ♓ 22h. 15′. |
| 14. | ☿ ☓ ☊ diff. Lat. 44′. |
| 15. | ☾ ♉ ☍ 23h. 3′. |
| 16. | ☾ ♉ 13h. 8′. |
| | ♀ ♏ diff. Lat. 50′. |
| 19. | ☾ ♌ ♊ 2h. 52′. |
| | ☿ ♈ ☊ diff. Lat. 36′. |
| 20. | ☾ ♈ ♋ 2h. 6′. |
| 22. | ☉ enters ♏ at 15h. 28′. |
| 24. | ☾ ♐ ♏ 2h. 47′. |
| 26. | ☾ ♌ ♍ 13h. 8′. |
| 28. | ☾ 4 ad ♑ ☌ 5h. 39′. |
| | ☾ ♑ ☌ 15h. 22′. |
| | ☾ ♎ ♏ 22h. 4′. |
| 30. | ☾ ☿ Serpentar. 10h. 0′. |

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Add. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | Sa. | 4. 9. 11. 58 | 8.46. 33,8 | 17. 58. 33 | 5. 51,9 | 3,9 |
| 2 | *Su.* | 4. 10. 9. 25 | 8.50. 26,4 | 17. 43. 13 | 5. 48,0 | 4,5 |
| 3 | M. | 4. 11. 6. 53 | 8.54. 18,4 | 17. 27. 35 | 5. 43,5 | 5,1 |
| 4 | Tu. | 4. 12. 4. 22 | 8.58. 9,9 | 17. 11. 40 | 5. 38,4 | 5,7 |
| 5 | W. | 4. 13. 1. 52 | 9. 2. 0,8 | 16. 55. 28 | 5. 32,7 | 6,3 |
| 6 | Th. | 4. 13. 59. 22 | 9. 5. 51,0 | 16. 39. 0 | 5. 26,4 | 6,9 |
| 7 | F. | 4. 14. 56. 54 | 9. 9. 40,6 | 16. 22. 15 | 5. 19,5 | 7,6 |
| 8 | Sa. | 4. 15. 54. 26 | 9.13. 29,6 | 16. 5. 15 | 5. 11,9 | 8,1 |
| 9 | *Su.* | 4. 16. 52. 0 | 9.17. 18,0 | 15. 48. 0 | 5. 3,8 | 8,6 |
| 10 | M. | 4. 17. 49. 35 | 9.21. 5,9 | 15. 30. 29 | 4. 55,2 | 9,2 |
| 11 | Tu. | 4. 18. 47. 11 | 9.24. 53,2 | 15. 12. 43 | 4. 46,0 | 9,8 |
| 12 | W. | 4. 19. 44. 49 | 9.28. 40,0 | 14. 54. 42 | 4. 36,2 | 10,3 |
| 13 | Th. | 4. 20. 42. 29 | 9.32. 26,2 | 14. 36. 27 | 4. 25,9 | 10,8 |
| 14 | F. | 4. 21. 40. 10 | 9.36. 11,9 | 14. 17. 58 | 4. 15,1 | 11,3 |
| 15 | Sa. | 4. 22. 37. 53 | 9.39. 57,1 | 13. 59. 15 | 4. 3,8 | 11,9 |
| 16 | *Su.* | 4. 23. 35. 37 | 9.43. 41,8 | 13. 40. 19 | 3. 51,9 | 12,3 |
| 17 | M. | 4. 24. 33. 23 | 9.47. 26,0 | 13. 21. 9 | 3. 39,6 | 12,8 |
| 18 | Tu. | 4. 25. 31. 11 | 9.51. 9,7 | 13. 1. 47 | 3. 26,8 | 13,2 |
| 19 | W. | 4. 26. 29. 0 | 9.54. 53,0 | 12. 42. 12 | 3. 13,6 | 13,7 |
| 20 | Th. | 4. 27. 26. 52 | 9.58. 35,8 | 12. 22. 24 | 2. 59,9 | 14,3 |
| 21 | F. | 4. 28. 24. 45 | 10. 2. 18,1 | 12. 2. 25 | 2. 45,6 | 14,7 |
| 22 | Sa. | 4. 29. 22. 39 | 10. 5. 59,9 | 11. 42. 15 | 2. 30,9 | 15,1 |
| 23 | *Su.* | 5. 0. 20. 35 | 10. 9. 41,3 | 11. 21. 53 | 2. 15,8 | 15,5 |
| 24 | M. | 5. 1. 18. 33 | 10.13. 22,4 | 11. 1. 20 | 2. 0,3 | 15,9 |
| 25 | Tu. | 5. 2. 16. 32 | 10.17. 2,9 | 10. 40. 37 | 1. 44,4 | 16,4 |
| 26 | W. | 5. 3. 14. 32 | 10,20. 43,0 | 10. 19. 44 | 1. 28,0 | 16,7 |
| 27 | Th. | 5. 4. 12. 34 | 10.24. 22,8 | 9. 58. 41 | 1. 11,3 | 17,1 |
| 28 | F. | 5. 5. 10. 37 | 10.28. 2,2 | 9. 37. 29 | 0. 54,2 | 17,6 |
| 29 | Sa. | 5. 6. 8. 41 | 10 31. 41,1 | 9. 16. 7 | 0. 36,6 | 17,9 |
| 30 | *Su.* | 5. 7. 6. 47 | 10.35. 19,7 | 8. 54. 36 | 0. 18,7 | 18,3 |
| 31 | M. | 5. 8. 4. 54 | 10.38. 58,0 | 8. 32. 56 | 0. 0,4 | |

| Days of the Month. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Diſtance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 15. 49,0 | 1. 6,5 | 2. 23,6 | 0. 006237 | 2. 27. 29 |
| 7 | 15. 49,9 | 1. 6,0 | 2. 23,9 | 0. 005820 | 2. 27. 10 |
| 13 | 15. 51,0 | 1. 5,5 | 2. 24,3 | 0. 005365 | 2. 26. 51 |
| 19 | 15. 52,2 | 1. 5,1 | 2. 24,6 | 0. 004863 | 2. 26. 32 |
| 25 | 15. 53,3 | 1. 4,7 | 2. 25,0 | 0. 004292 | 2. 26. 13 |

The Eclipſes of JUPITER's Satellites will not be viſible this Month, JUPITER being too near the Sun.

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| | **MERCURY.** | | | | | |
| 1 | 5. 10. 57 | 6. 20 N | 4. 17. 26 | 1. 44 N | 17. 16 N | 0. 35 |
| 7 | 6. 5. 28 | 4. 33 | 4. 28. 37 | 1. 24 | 13. 17 | 0. 55 |
| 13 | 6. 26. 13 | 2. 22 | 5. 8. 54 | 0. 49 | 9. 0 | 1. 11 |
| 19 | 7. 14. 33 | 0. 10 N | 5. 18. 17 | 0. 4 N | 4. 42 | 1. 22 |
| 25 | 8. 1. 33 | 1. 54 S | 5. 26. 50 | 0. 47 S | 0. 32 | 1. 30 |
| | **VENUS.** | | | | | |
| 1 | 7. 3. 49 | 2. 13 N | 5. 12. 48 | 1. 14 N | 7. 54 N | 2. 12 |
| 7 | 7. 13. 25 | 1. 45 | 5. 19. 57 | 1. 0 | 4. 54 | 2. 15 |
| 13 | 7. 23. 0 | 1. 15 | 5. 27. 3 | 0. 44 | 1. 51 N | 2. 18 |
| 19 | 8. 2. 33 | 0. 43 | 6. 4. 8 | 0. 26 | 1. 15 S | 2. 21 |
| 25 | 8. 12. 5 | 0. 9 | 6. 11. 12 | 0. 6 | 4. 21 | 2. 24 |
| | **MARS.** | | | | | |
| 1 | 3. 11. 50 | 1. 29 N | 3. 22. 22 | 0. 56 N | 22. 32 N | 22. 50 |
| 7 | 3. 14. 38 | 1. 32 | 3. 26. 16 | 0. 58 | 21. 52 | 22. 43 |
| 13 | 3. 17. 26 | 1. 35 | 4. 0. 8 | 1. 1 | 21. 8 | 22. 37 |
| 19 | 3. 20. 12 | 1. 38 | 4. 4. 1 | 1. 3 | 20. 18 | 22. 31 |
| 25 | 3. 22. 57 | 1. 40 | 4. 7. 51 | 1. 5 | 19. 23 | 22. 24 |
| | **JUPITER.** ♂ $30^d. 12^h.$ | | | | | |
| 1 | 5. 5. 20 | 1. 6 N | 5. 1. 17 | 0. 56 N | 11. 55 N | 1. 28 |
| 7 | 5. 5. 48 | 1. 6 | 5. 2. 33 | 0. 57 | 11. 28 | 1. 10 |
| 13 | 5. 6. 16 | 1. 7 | 5. 3. 49 | 0. 57 | 11. 0 | 0. 52 |
| 19 | 5. 6. 44 | 1. 7 | 5. 5. 6 | 0. 57 | 10. 32 | 0. 35 |
| 25 | 5. 7. 11 | 1. 8 | 5. 6. 24 | 0. 57 | 10. 3 | 0. 17 |
| | **SATURN.** | | | | | |
| 1 | 7. 14. 52 | 2. 18 N | 7. 8. 59 | 2. 19 N | 12. 19 S | 5. 42 |
| 7 | 7. 15. 3 | 2. 18 | 7. 9. 11 | 2. 17 | 12. 24 | 5. 20 |
| 13 | 7. 15. 14 | 2. 17 | 7. 9. 28 | 2. 15 | 12. 33 | 4. 58 |
| 19 | 7. 15. 25 | 2. 17 | 7. 9. 48 | 2. 13 | 12. 39 | 4. 37 |
| 25 | 7. 15. 36 | 2. 17 | 7. 10. 10 | 2. 12 | 12. 47 | 4. 16 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | Sa. | 7. 23. 6. 13 | 7. 29. 1. 42 | 3. 2. 56 N | 2. 35. 51 N |
| 2 | *Su.* | 8. 4. 56. 11 | 8. 10. 50. 14 | 2. 7. 11 | 1. 37. 12 |
| 3 | M. | 8. 16. 44. 29 | 8. 22. 39. 30 | 1. 6. 11 | 0. 34. 25 N |
| 4 | Tu. | 8. 28. 35. 47 | 9. 4. 33. 52 | 0. 2. 12 N | 0. 30. 12 S |
| 5 | W. | 9. 10. 34. 9 | 9. 16. 36. 58 | 1. 2. 24 S | 1. 34. 6 |
| 6 | Th. | 9. 22. 42. 43 | 9. 28. 51. 38 | 2. 4. 56 | 2. 34. 32 |
| 7 | F. | 10. 5. 3. 53 | 10. 11. 19. 39 | 3. 2. 32 | 3 28. 34 |
| 8 | Sa. | 10. 17. 39. 0 | 10. 24. 1. 58 | 3. 52. 15 | 4. 13. 15 |
| 9 | *Su.* | 11. 0. 28. 33 | 11. 6. 58. 41 | 4. 31. 11 | 4. 45. 48 |
| 10 | M. | 11. 13. 32. 17 | 11. 20. 9. 14 | 4. 56. 46 | 5. 3. 52 |
| 11 | Tu. | 11. 26. 49. 24 | 0. 3. 32. 36 | 5. 6. 55 | 5. 5. 46 |
| 12 | W. | 0. 10. 18. 43 | 0. 17. 7. 36 | 5. 0. 19 | 4. 50. 36 |
| 13 | Th. | 0. 23. 59. 4 | 1. 0. 53. 1 | 4. 36. 41 | 4. 18. 40 |
| 14 | F. | 1. 7. 49. 21 | 1. 14. 47. 48 | 3. 56. 44 | 3. 31. 10 |
| 15 | Sa. | 1. 21. 48. 28 | 1. 28. 51. 7 | 3. 2. 17 | 2. 30. 30 |
| 16 | *Su.* | 2. 5. 55. 40 | 2. 13. 1. 59 | 1, 56. 16 | 1. 20. 5 |
| 17 | M. | 2. 20. 9. 50 | 2. 27. 19. 2 | 0. 42. 32 S | 0. 4. 14 S |
| 18 | Tu. | 3. 4. 29. 18 | 3. 11. 40. 13 | 0. 34. 12 N | 1. 12. 7 N |
| 19 | W. | 3. 18. 51. 22 | 3. 26. 2. 15 | 1. 48. 51 | 2. 23. 48 |
| 20 | Th. | 4. 3. 12. 13 | 4. 10. 20. 42 | 2. 56. 21 | 3. 25. 57 |
| 21 | F. | 4. 17. 26. 57 | 4. 24. 30. 25 | 3. 52. 10 | 4. 14. 38 |
| 22 | Sa. | 5. 1. 30. 23 | 5. 8. 26. 17 | 4. 33. 0 | 4. 47. 10 |
| 23 | *Su.* | 5. 15. 17. 34 | 5. 22. 3. 54 | 4. 56. 59 | 5. 2. 29 |
| 24 | M. | 5. 28. 44. 56 | 6. 5. 20. 30 | 5. 3. 43 | 5. 0. 54 |
| 25 | Tu. | 6. 11. 50. 34 | 6. 18. 15. 14 | 4. 54. 10 | 4. 43. 48 |
| 26 | W. | 6. 24. 34. 37 | 7. 0. 49. 6 | 4. 30. 4 | 4. 13. 15 |
| 27 | Th. | 7. 6. 58. 59 | 7. 13. 4. 50 | 3. 53. 40 | 3. 31. 36 |
| 28 | F. | 7. 19. 7. 5 | 7. 25. 6. 22 | 3. 7. 22 | 2. 41. 13 |
| 29 | Sa. | 8. 1. 3. 23 | 8. 6. 58. 40 | 2. 13. 29 | 1. 44. 25 |
| 30 | *Su.* | 8. 12. 52. 59 | 8. 18. 47. 1 | 1. 14. 20 | 0. 43. 24 N |
| 31 | M. | 8. 24. 41. 24 | 9. 0. 36. 54 | 0. 12. 4 | 0. 19. 30 S |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſcen. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declination at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | Sa. | 10 | 6. 51 | 231. 30 | 237. 24 | 15. 37 S | 17. 26 S |
| 2 | *Su.* | 11 | 7. 37 | 243. 23 | 249. 30 | 19. 4 | 20. 29 |
| 3 | M. | 12 | 8. 25 | 255. 43 | 262. 2 | 21. 42 | 22. 41 |
| 4 | Tu. | 13 | 9. 14 | 268. 28 | 275. 0 | 23. 26 | 23. 53 |
| 5 | W. | 14 | 10. 5 | 281. 35 | 288. 14 | 24. 4 | 23. 59 |
| 6 | Th. | 15 | 10. 56 | 294. 54 | 301. 34 | 23. 36 | 22. 56 |
| 7 | F. | 16 | 11. 47 | 308. 13 | 314. 49 | 21. 58 | 20. 44 |
| 8 | Sa. | 17 | 12. 37 | 321. 21 | 327. 49 | 19. 15 | 17. 30 |
| 9 | *Su.* | 18 | 13. 26 | 334. 12 | 340. 31 | 15. 32 | 13. 23 |
| 10 | M. | 19 | 14. 13 | 346. 46 | 352. 58 | 11. 2 | 8. 34 |
| 11 | Tu. | 20 | 15. 0 | 359. 8 | 5. 17 | 5. 57 | 3. 16 S |
| 12 | W. | 21 | 15. 47 | 11. 26 | 17. 38 | 0. 31 S | 2. 15 N |
| 13 | Th. | 22 | 16. 36 | 23. 54 | 30. 16 | 5. 1 N | 7. 45 |
| 14 | F. | 23 | 17. 27 | 36. 45 | 43. 23 | 10. 24 | 12. 56 |
| 15 | Sa. | 24 | 18. 21 | 50. 12 | 57. 12 | 15. 18 | 17. 29 |
| 16 | *Su.* | 25 | 19. 19 | 64. 23 | 71. 47 | 19. 25 | 21. 4 |
| 17 | M. | 26 | 20. 19 | 79. 21 | 87. 5 | 22. 24 | 23. 22 |
| 18 | Tu. | 27 | 21. 21 | 94. 55 | 102. 48 | 23. 58 | 24. 9 |
| 19 | W. | 28 | 22. 22 | 110. 42 | 118. 32 | 23. 56 | 23. 19 |
| 20 | Th. | 29 | 23. 20 | 126. 15 | 133. 48 | 22. 19 | 20. 58 |
| 21 | F. | 1 | ♂ | 141. 9 | 148. 17 | 19. 18 | 17. 21 |
| 22 | Sa. | 2 | 0. 16 | 155. 13 | 161. 55 | 15. 12 | 12. 51 |
| 23 | *Su.* | 3 | 1. 7 | 168. 25 | 174. 43 | 10. 22 | 7. 47 |
| 24 | M. | 4 | 1. 54 | 180. 52 | 186. 54 | 5. 8 N | 2. 29 N |
| 25 | Tu. | 5 | 2. 39 | 192. 48 | 198. 38 | 0. 10 S | 2. 48 S |
| 26 | W. | 6 | 3. 23 | 204. 25 | 210. 10 | 5. 21 | 7. 49 |
| 27 | Th. | 7 | 4. 6 | 215. 56 | 221. 43 | 10. 11 | 12. 25 |
| 28 | F. | 8 | 4. 50 | 227. 32 | 233. 26 | 14. 31 | 16. 27 |
| 29 | Sa. | 9 | 5. 36 | 239. 24 | 245. 27 | 18. 13 | 19. 47 |
| 30 | *Su.* | 10 | 6. 23 | 251. 37 | 257. 52 | 21. 8 | 22. 16 |
| 31 | M. | 11 | 7. 12 | 264. 13 | 270. 41 | 23. 9 | 23. 47 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | Sa. | 14. 51 | 14. 49 | 54. 29 | 54. 23 | 5190 | 5198 |
| 2 | *Su.* | 14. 48 | 14. 48 | 54. 20 | 54. 19 | 5202 | 5203 |
| 3 | M. | 14. 48 | 14. 49 | 54. 20 | 54. 23 | 5202 | 5198 |
| 4 | Tu. | 14. 50 | 14. 53 | 54. 28 | 54. 36 | 5191 | 5181 |
| 5 | W. | 14. 55 | 14. 58 | 54. 45 | 54. 55 | 5169 | 5155 |
| 6 | Th. | 15. 1 | 15. 4 | 55. 6 | 55. 19 | 5141 | 5124 |
| 7 | F. | 15. 8 | 15. 12 | 55. 33 | 55. 46 | 5106 | 5089 |
| 8 | Sa. | 15. 16 | 15. 20 | 56. 1 | 56. 16 | 5069 | 5050 |
| 9 | *Su.* | 15. 24 | 15. 28 | 56. 32 | 56. 47 | 5029 | 5010 |
| 10 | M. | 15. 32 | 15. 37 | 57. 2 | 57. 17 | 4991 | 4972 |
| 11 | Tu. | 15. 40 | 15. 44 | 57. 31 | 57. 46 | 4955 | 4936 |
| 12 | W. | 15. 48 | 15. 52 | 58. 0 | 58. 14 | 4918 | 4901 |
| 13 | Th. | 15. 56 | 15. 59 | 58. 27 | 58. 40 | 4885 | 4869 |
| 14 | F. | 16. 2 | 16. 5 | 58. 52 | 59. 3 | 4854 | 4841 |
| 15 | Sa. | 16. 8 | 16. 11 | 59. 14 | 59. 23 | 4827 | 4816 |
| 16 | *Su.* | 16. 13 | 16. 15 | 59. 32 | 59. 40 | 4805 | 4795 |
| 17 | M. | 16. 17 | 16. 18 | 59. 45 | 59. 49 | 4789 | 4784 |
| 18 | Tu. | 16. 18 | 16. 18 | 59. 51 | 59. 51 | 4782 | 4782 |
| 19 | W. | 16. 17 | 16. 16 | 59. 48 | 59. 43 | 4786 | 4792 |
| 20 | Th. | 16. 14 | 16. 11 | 59. 36 | 59. 25 | 4800 | 4813 |
| 21 | F. | 16. 8 | 16. 4 | 59. 12 | 58. 57 | 4830 | 4848 |
| 22 | Sa. | 15. 59 | 15. 54 | 58. 39 | 58. 20 | 4870 | 4893 |
| 23 | *Su.* | 15. 48 | 15. 42 | 57. 59 | 57. 37 | 4919 | 4947 |
| 24 | M. | 15. 36 | 15. 30 | 57. 16 | 56. 53 | 4973 | 5003 |
| 25 | Tu. | 15. 24 | 15. 18 | 56. 32 | 56. 10 | 5029 | 5058 |
| 26 | W. | 15. 13 | 15. 8 | 55. 51 | 55. 32 | 5082 | 5107 |
| 27 | Th. | 15. 3 | 14. 59 | 55. 15 | 55. 1 | 5129 | 5148 |
| 28 | F. | 14. 56 | 14. 53 | 54. 48 | 54. 38 | 5165 | 5178 |
| 29 | Sa. | 14. 51 | 14. 50 | 54. 29 | 54. 25 | 5190 | 5195 |
| 30 | *Su.* | 14. 49 | 14. 49 | 54. 24 | 54. 24 | 5197 | 5197 |
| 31 | M. | 14. 50 | 14. 51 | 54. 26 | 54. 31 | 5194 | 5187 |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | α Aquilæ. | 67. 15. 47 | 66. 2. 47 | 64. 50. 10 | 63. 37. 59 |
| 2 | | 57. 44. 14 | 56. 25. 5 | 55. 26. 31 | 54. 18. 34 |
| 3 | Fomal-haut. | 75. 30. 48 | 74. 5. 45 | 72. 40. 42 | 71. 15. 39 |
| 4 | | 64. 10. 25 | 62. 35. 22 | 61. 20. 19 | 59. 55. 17 |
| 5 | | 52. 50. 51 | | | |
| 5 | | 71. 23. 37 | 70. 2. 6 | 68. 40. 36 | 67. 19. 7 |
| 6 | α Pegasi. | 60. 32. 52 | 59. 11. 58 | 57. 51. 16 | 56. 30. 48 |
| 7 | | 49. 52. 47 | | | |
| 7 | | 90. 2. 0 | 88. 31. 7 | 87. 0. 3 | 85. 28. 47 |
| 8 | α Arietis. | 77. 49. 46 | 76. 17. 27 | 74. 44. 59 | 73. 12. 22 |
| 9 | | 65. 27. 11 | 63. 53. 47 | 62. 20. 17 | 60. 46. 43 |
| 10 | | 52. 58. 1 | | | |
| 10 | | 82. 43. 59 | 81. 5. 36 | 79. 27. 0 | 77. 48. 14 |
| 11 | | 69. 31. 32 | 67. 51. 38 | 66. 11. 34 | 64. 31. 18 |
| 12 | Aldeba-ran. | 56. 7. 22 | 54. 26. 3 | 52. 44. 35 | 51. 2. 56 |
| 13 | | 42. 32. 24 | 40. 49. 50 | 39. 7. 8 | 37. 24. 19 |
| 14 | | 28. 48. 29 | 27. 5. 4 | 25. 21. 38 | 23. 38. 11 |
| 15 | | 15. 2. 23 | | | |
| 13 | | 116. 37. 50 | 115. 2. 19 | 113. 26. 37 | 111. 50. 45 |
| 14 | | 103. 48. 50 | 102. 11. 58 | 100. 34. 56 | 98. 57. 44 |
| 15 | The Sun. | 90. 49. 21 | 89. 11. 13 | 87. 32. 57 | 85. 54. 32 |
| 16 | | 77. 40. 23 | 76. 1. 10 | 74. 21. 50 | 72. 42. 23 |
| 17 | | 64. 23. 39 | 62. 43. 39 | 61. 3. 35 | 59. 23. 27 |
| 18 | | 51. 2. 1 | 49. 21. 30 | 47. 41. 18 | 46. 0. 58 |
| 24 | | 68. 30. 50 | 66. 52. 31 | 65. 14. 34 | 63. 36. 57 |
| 25 | Antares. | 55. 34. 15 | 53. 58. 47 | 52. 23. 40 | 50. 48. 54 |
| 26 | | 43. 0. 32 | 41. 27. 55 | 39. 55. 40 | 38. 23. 47 |
| 27 | | 30. 50. 3 | | | |
| 27 | | 80. 49. 52 | 79. 32. 23 | 78. 15. 14 | 76. 58. 25 |
| 28 | α Aquilæ. | 70. 39. 42 | 69. 25. 6 | 68. 10. 57 | 66. 57. 12 |
| 29 | | 60. 55. 25 | 59. 44. 35 | 58. 34. 21 | 57. 24. 44 |
| 30 | | 51. 46. 36 | | | |
| 30 | Fomal-haut. | 79. 8. 35 | 77. 43. 35 | 76. 18. 38 | 74. 53. 43 |
| 31 | | 67. 49. 41 | 66. 24. 56 | 65. 0. 13 | 63. 35. 32 |
| S. 1 | | 56. 32. 34 | | | |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | α Aquilæ. | 62. 26. 15 | 61. 14. 58 | 60. 4. 12 | 58. 53. 58 |
| 2 | | 53. 11. 15 | | | |
| 2 | Fomalhaut. | 81. 10. 59 | 79. 45. 56 | 78. 20. 54 | 76. 55. 51 |
| 3 | | 69. 50. 36 | 68. 25. 33 | 67. 0. 30 | 65. 35. 28 |
| 4 | | 58. 30. 17 | 57. 5. 20 | 55. 40. 26 | 54. 15. 36 |
| 5 | α Pegaſi. | 65. 57. 41 | 64. 36. 19 | 63. 15. 3 | 61. 53. 54 |
| 6 | | 55. 10. 33 | 53. 50. 36 | 52. 30. 58 | 51. 11. 41 |
| 7 | α Arietis. | 83. 57. 20 | 82. 25. 42 | 80. 53. 54 | 79. 21. 55 |
| 8 | | 71. 39. 36 | 70. 6. 41 | 68. 33. 38 | 67. 0. 28 |
| 9 | | 59. 13. 4 | 57. 39. 22 | 56. 5. 37 | 54. 31. 50 |
| 10 | Aldebaran. | 76. 9. 16 | 74. 30. 7 | 72. 50. 46 | 71. 11. 15 |
| 11 | | 62. 50. 52 | 61. 10. 15 | 59. 29. 28 | 57. 48. 30 |
| 12 | | 49. 21. 8 | 47. 39. 10 | 45. 57. 4 | 44. 14. 48 |
| 13 | | 35. 41. 22 | 33. 58. 16 | 32. 15. 6 | 30. 31. 59 |
| 14 | | 21. 54. 43 | 20. 11. 25 | 18. 28. 14 | 16. 45. 13 |
| 12 | The Sun. | | 121. 23. 17 | 119. 48. 18 | 118. 13. 9 |
| 13 | | 110. 14. 42 | 108. 38. 29 | 107. 2. 6 | 105. 25. 33 |
| 14 | | 97. 20. 23 | 95. 42. 51 | 94. 5. 10 | 92. 27. 20 |
| 15 | | 84. 15. 58 | 82. 37. 16 | 80. 58. 26 | 79. 19. 29 |
| 16 | | 71. 2. 50 | 69. 23. 10 | 67. 43. 25 | 66. 3. 35 |
| 17 | | 57. 43. 15 | 56. 3. 0 | 54. 22. 42 | 52. 42. 22 |
| 18 | | 44. 20. 39 | 42. 40. 22 | 41. 0. 8 | 39. 19. 58 |
| 23 | Antares. | 75. 7. 37 | 73. 27. 54 | 71. 48. 31 | 70. 9. 30 |
| 24 | | 61. 59. 42 | 60. 22. 48 | 58. 46. 16 | 57. 10. 5 |
| 25 | | 49. 14. 30 | 47. 40. 29 | 46. 6. 48 | 44. 33. 29 |
| 26 | | 36. 52. 16 | 35. 21. 8 | 33. 50. 23 | 32. 20. 1 |
| 27 | α Aquilæ. | 75. 41. 56 | 74. 25. 49 | 73. 10. 4 | 71. 54. 42 |
| 28 | | 65. 43. 54 | 64. 31. 2 | 63. 18. 39 | 62. 6. 47 |
| 29 | | 56. 15. 43 | 55. 7. 23 | 53. 59. 43 | 52. 52. 47 |
| 30 | Fomalhaut. | 73. 28. 51 | 72. 4. 1 | 70. 39. 13 | 69. 14. 26 |
| 31 | | 62. 10. 52 | 60. 46. 14 | 59. 21. 39 | 57. 57. 5 |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | The Sun. | 103. 53. 3 | 105. 14. 50 | 106. 36. 33 | 107. 58. 12 |
| 2 | | 114. 45. 41 | 116. 7. 6 | 117. 28. 30 | 118. 49. 54 |
| 1 | Spica ♍ | 32. 44. 30 | 34. 11. 30 | 35. 38. 36 | 37. 5. 45 |
| 2 | | 44. 22. 28 | 45. 49. 59 | 47. 17. 33 | 48. 45. 11 |
| 3 | | 56. 4. 24 | 57. 32. 29 | 59. 0. 40 | 60. 28. 57 |
| 4 | | 67. 51. 54 | | | |
| 4 | Antares. | 22. 22. 33 | 23. 48. 30 | 25. 14. 55 | 26. 41. 46 |
| 5 | | 34. 1. 57 | 35. 30. 56 | 37. 0. 12 | 38. 29. 45 |
| 6 | | 46. 1. 19 | 47. 32. 23 | 49. 3. 41 | 50. 35. 13 |
| 7 | | 58. 16. 19 | 59. 49. 13 | 61. 22. 20 | 62. 55. 42 |
| 8 | | 70. 45. 46 | 72. 20. 27 | 73. 55. 20 | 75. 30. 27 |
| 9 | | 83. 29. 6 | 85. 5. 28 | 86. 42. 2 | 88. 18. 48 |
| 10 | | 96. 25. 37 | 98. 3. 34 | 99. 41. 43 | 101. 20. 3 |
| 11 | α Aquilæ. | 65. 31. 17 | 66. 53. 9 | 68. 15. 33 | 69. 38. 29 |
| 12 | | 76. 40. 7 | 78. 5. 38 | 79. 31. 29 | 80. 57. 38 |
| 13 | Fomalhaut. | 54. 9. 59 | 55. 46. 34 | 57. 23. 33 | 59. 0. 56 |
| 14 | | 67. 13. 4 | 68. 52. 24 | 70. 31. 59 | 72. 11. 48 |
| 15 | α Pegasi. | 64. 19. 50 | 65. 53. 47 | 67. 28. 9 | 69. 2. 55 |
| 16 | | 77. 1. 58 | | | |
| 16 | α Arietis | 33. 24. 57 | 35. 1. 18 | 36. 38. 31 | 38. 16. 32 |
| 17 | | 46. 36. 42 | 48. 18. 17 | 50. 0. 14 | 51. 42. 34 |
| 18 | | 60. 18. 38 | 62. 2. 30 | 63. 46. 31 | 65. 30. 41 |
| 19 | | 74. 13. 0 | | | |
| 19 | Aldebaran. | 42. 44. 30 | 44. 32. 8 | 46. 19. 45 | 48. 7. 19 |
| 20 | | 57. 4. 16 | 58. 51. 23 | 60. 38. 23 | 62. 25. 15 |
| 25 | The Sun. | 39. 49. 12 | 41. 17. 39 | 42. 45. 48 | 44. 13. 39 |
| 26 | | 51. 28. 33 | 52. 54. 42 | 54. 20. 37 | 55. 46. 13 |
| 27 | | 62. 50. 30 | 64. 14. 39 | 65. 38. 36 | 67. 2. 19 |
| 28 | | 73. 57. 55 | 75. 20. 30 | 76. 42. 57 | 78. 5. 15 |
| 29 | | 84. 54. 55 | 86. 16. 32 | 87. 38. 3 | 88. 59. 30 |
| 30 | | 95. 46. 7 | 97. 7. 22 | 98. 28. 37 | 99. 49. 52 |
| 31 | | 106. 36. 30 | 107. 57. 59 | 109. 19. 33 | 110. 41. 11 |
| S. 1 | | 117. 30. 52 | | | |
| 30 | Spica ♍ | 52. 13. 53 | 53. 41. 45 | 55. 9. 40 | 56. 37. 38 |
| 31 | | 63. 58. 10 | 65. 26. 32 | 66. 55. 0 | 68. 23. 34 |
| S. 1 | | 75. 48. 8 | | | |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | The Sun. | 109. 19. 47 | 110. 41. 19 | 112. 2. 48 | 113. 24. 16 |
| 2 | | 120. 11. 19 | | | |
| 1 | | 38. 33. 0 | 40. 0. 17 | 41. 27. 37 | 42. 55. 1 |
| 2 | Spica ♍ | 50. 12. 53 | 51. 40. 39 | 53. 8. 29 | 54. 36. 24 |
| 3 | | 61. 57. 19 | 63. 25. 48 | 64. 54. 23 | 66. 23. 5 |
| 4 | | 28. 9. 4 | 29. 36. 46 | 31. 4. 50 | 32. 33. 13 |
| 5 | | 39. 59. 34 | 41. 29. 38 | 42. 59. 56 | 44. 30. 30 |
| 6 | | 52. 7. 0 | 53. 38. 59 | 55. 11. 12 | 56. 43. 39 |
| 7 | Antares. | 64. 29. 16 | 66. 3. 4 | 67. 37. 5 | 69. 11. 19 |
| 8 | | 77. 5. 46 | 78. 41. 17 | 80. 17. 1 | 81. 52. 57 |
| 9 | | 89. 55. 46 | 91. 32. 56 | 93. 10. 18 | 94. 47. 52 |
| 10 | | 102. 58. 34 | | | |
| 10 | | 60. 10. 10 | 61. 29. 26 | 62. 49. 24 | 64. 10. 2 |
| 11 | α Aquilæ | 71. 1. 57 | 72. 25. 52 | 73. 50. 12 | 75. 14. 57 |
| 12 | | 82. 24. 5 | | | |
| 12 | | 47. 48. 22 | 49. 23. 2 | 50. 58. 12 | 52. 33. 52 |
| 13 | Fomal-haut. | 60. 38. 42 | 62. 16. 49 | 63. 55. 15 | 65. 34. 0 |
| 14 | | 73. 51. 50 | | | |
| 14 | | 58. 9. 0 | 59. 40. 55 | 61. 13. 23 | 62. 46. 22 |
| 15 | α Pegaſi. | 70. 38. 5 | 72. 13. 36 | 73. 49. 26 | 75. 25. 34 |
| 16 | | 39. 55. 19 | 41. 34. 48 | 43. 14. 52 | 44. 55. 30 |
| 17 | α Arietis. | 53. 25. 16 | 55. 8. 15 | 56. 51. 28 | 58. 34. 56 |
| 18 | | 67. 14. 59 | 68. 59. 23 | 70. 43. 52 | 72. 28. 25 |
| 19 | Aldeba- | 49. 54. 51 | 51. 42. 20 | 53. 29. 43 | 55. 17. 2 |
| 20 | ran. | 64. 11. 58 | | | |
| 25 | | 45. 41. 12 | 47. 8. 27 | 48. 35. 26 | 50. 2. 8 |
| 26 | | 57. 11. 35 | 58. 36. 40 | 60. 1. 31 | 61. 26. 8 |
| 27 | | 68. 25. 50 | 69. 49. 7 | 71. 12. 14 | 72. 35. 10 |
| 28 | The Sun. | 79. 27. 25 | 80. 49. 27 | 82. 11. 23 | 83. 33. 12 |
| 29 | | 90. 20. 55 | 91. 42. 16 | 93. 3. 35 | 94. 24. 52 |
| 30 | | 101. 11. 8 | 102. 32. 25 | 103. 53. 44 | 105. 15. 6 |
| 31 | | 112. 2. 55 | 113. 24. 44 | 114. 46. 40 | 116. 8. 42 |
| 29 | | 46. 22. 39 | 47. 50. 26 | 49. 18. 14 | 50. 46. 2 |
| 30 | Spica ♍ | 58. 5. 37 | 59. 33. 39 | 61. 1. 46 | 62. 29. 57 |
| 31 | | 69. 52. 14 | 71. 21. 1 | 72. 49. 56 | 74. 18. 58 |

The Satellites of JUPITER are not visible this Month, JUPITER being too near the SUN.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | Th. | Giles. |
| 2 | W. | *London burnt* 1666, O.S. |
| 3 | Th. | |
| 4 | F. | |
| 5 | Sa. | |
| 6 | *Su.* | *12th Sunday after Trinity.* |
| 7 | M. | Enurchus. |
| 8 | Tu. | Nativity of B. V. Mary. |
| 9 | W. | |
| 10 | Th. | |
| 11 | F. | |
| 12 | Sa. | |
| 13 | *Su.* | *13th Sunday after Trinity.* |
| 14 | M. | Holy Crofs. |
| 15 | Tu. | |
| 16 | W. | |
| 17 | Th. | Lambert. |
| 18 | F. | |
| 19 | Sa. | |
| 20 | *Su.* | *14th Sunday after Trinity.* |
| 21 | M. | *St. Matthew.* |
| 22 | Tu. | *K. Geo.* III. *crown'd* 1761. |
| 23 | W. | |
| 24 | Th. | |
| 25 | F. | |
| 26 | Sa. | S. Cyprian. |
| 27 | *Su.* | *15th Sunday after Trinity.* |
| 28 | M. | |
| 29 | Tu. | *St. Mich. Prt. Char. Aug.* |
| 30 | W. | S. Jerome. [*born.* |

Phafes of the Moon.

Full Moon — 6. 8. 43
Laft Quarter — 13. 7. 9
New Moon — 20. 7. 18
Firft Quarter — 28. 6. 32

D. Other Phenomena.

4. ☾ ♀ ♍ Im. $6^h$. 14′. * 12′ S. of ☽'s center. Em. $7^h$. 1′. * 9′½ S.
12. ☾ ♀ ♉ $4^h$. 33′.
☾ ☿ ♉ $18^h$. 44′.
13. ☾ ♊ II $23^h$. 3′.
14. ☾ ♂ II $2^h$. 13′.
☾ ♀ II $10^h$. 8′.
16. ☾ ♈ ♋ $9^h$. 25′.
17. ☾ ♊ ♌ $16^h$. 59′.
20. ☾ ☌ ♍ $11^h$. 41′.
21. ♂ ♄ ♀ diff. Lat. 26′.
22. ☉ enters ♎ at $11^h$.47′.
☾ ☍ ♍ $21^h$. 51′.
24. ☾ 4 ad ☌ ♎ $14^h$. 1′.
25. ☾ ☍ ♏ Im. $6^h$. 16′. * 9′ S. of ☽'s center. Em. $7^h$. 20′. * 7′ S.
♀ ☍ ♎ diff. Lat. 11′.
26. ☾ ☍ Ophiuchi $18^h$.10′.
☾ ☍ Ophiuchi $21^h$. 5′.
28. ☾ ☌ ♐ $1^h$. 34′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. North. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | Tu. | 5. 9. 3. 2 | 10.42.35,9 | 8. 11. 10 | 0. 18,2 | 18,8 |
| 2 | W. | 5. 10. 1. 12 | 10.46.13,5 | 7. 49. 15 | 0. 37,0 | 19,2 |
| 3 | Th. | 5. 10. 59. 23 | 10.49.50,8 | 7. 27. 13 | 0. 56,2 | 19,5 |
| 4 | F. | 5. 11. 57. 35 | 10.53.27,9 | 7. 5. 4 | 1. 15,7 | 19,7 |
| 5 | Sa. | 5. 12. 55. 49 | 10.57. 4,7 | 6. 42. 47 | 1. 35,4 | 19,9 |
| 6 | *Su.* | 5. 13. 54. 5 | 11. 0.41,3 | 6. 20. 24 | 1. 55,3 | 20,1 |
| 7 | M. | 5. 14. 52. 23 | 11. 4.17,7 | 5. 57. 55 | 2. 15,4 | 20,3 |
| 8 | Tu. | 5. 15. 50. 43 | 11. 7.53,9 | 5. 35. 19 | 2. 35,7 | 20,4 |
| 9 | W. | 5. 16. 49. 5 | 11.11.29,9 | 5. 12. 38 | 2. 56,1 | 20,6 |
| 10 | Th. | 5. 17. 47. 28 | 11.15. 5,9 | 4. 49. 51 | 3. 16,7 | 20,7 |
| 11 | F. | 5. 18. 45. 54 | 11.18.41,7 | 4. 27. 0 | 3. 37,4 | 20,8 |
| 12 | Sa. | 5. 19. 44. 22 | 11.22.17,4 | 4. 4. 4 | 3. 58,2 | 20,9 |
| 13 | *Su.* | 5. 20. 42. 52 | 11.25.53,0 | 3. 41. 3 | 4. 19,1 | 20,9 |
| 14 | M. | 5. 21. 41. 25 | 11.29.28,6 | 3. 17. 58 | 4. 40,0 | 20,9 |
| 15 | Tu. | 5. 22. 40. 0 | 11.33. 4,2 | 2. 54. 49 | 5. 0,9 | 20,9 |
| 16 | W. | 5. 23. 38. 37 | 11.36.39,7 | 2. 31. 37 | 5. 21,8 | 20,9 |
| 17 | Th. | 5. 24. 37. 16 | 11.40.15,3 | 2. 8. 22 | 5. 42,7 | 20,9 |
| 18 | F. | 5. 25. 35. 58 | 11.43.50,9 | 1. 45. 4 | 6. 3,6 | 20,8 |
| 19 | Sa. | 5. 26. 34. 41 | 11.47.26,5 | 1. 21. 43 | 6. 24,4 | 20,8 |
| 20 | *Su.* | 5. 27. 33. 27 | 11.51. 2,2 | 0. 58. 21 | 6. 45,2 | 20,8 |
| 21 | M. | 5. 28. 32. 15 | 11.54.38,0 | 0. 34. 56 | 7. 6,0 | 20,6 |
| 22 | Tu. | 5. 29. 31. 5 | 11.58.13,9 | 0. 11. 31 South. | 7. 26,6 | 20,6 |
| 23 | W. | 6. 0. 29. 57 | 12. 1.49,9 | 0. 11. 56 | 7. 47,2 | 20,5 |
| 24 | Th. | 6. 1. 28. 51 | 12. 5.25,9 | 0. 35. 23 | 8. 7,7 | 20,1 |
| 25 | F. | 6. 2. 27. 46 | 12. 9. 2,2 | 0. 58. 50 | 8. 27,8 | 20,1 |
| 26 | Sa. | 6. 3. 26. 43 | 12.12.38,6 | 1. 22. 17 | 8. 47,9 | 19,9 |
| 27 | *Su.* | 6. 4. 25. 42 | 12.16.15,2 | 1. 45. 43 | 9. 7,8 | 19,7 |
| 28 | M. | 6. 5. 24. 43 | 12.19.52,0 | 2. 9. 9 | 9. 27,5 | 19,5 |
| 29 | Tu. | 6. 6. 23. 46 | 12.23.29,0 | 2. 32. 34 | 9. 47,0 | 19,2 |
| 30 | W. | 6. 7. 22. 51 | 12.27. 6,4 | 2. 55. 57 | 10. 6,2 | |

| Days | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 15. 55,0 | 1. 4,3 | 2. 25,4 | 0,003545 | 2. 25. 50 |
| 7 | 15. 56,4 | 1. 4,1 | 2. 25,7 | 0,002873 | 2. 25. 31 |
| 13 | 15. 58,0 | 1. 4,0 | 2. 26,2 | 0,002190 | 2. 25. 12 |
| 19 | 15. 59,5 | 1. 4,0 | 2. 26,7 | 0,001486 | 2. 24. 53 |
| 25 | 16. 1,1 | 1. 4,1 | 2. 27,3 | 0,000741 | 2. 24. 34 |

The Eclipſes of JUPITER's Satellites will not be viſible this Month, JUPITER being too near the Sun.

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** Greatest Elong. 7d. | | | | | | |
| 1 | 8. 20. 47 | 4. 1 S | 6. 5. 31 | 1. 50 S | 3. 52 S | 1. 35 |
| 7 | 9. 7. 39 | 5. 30 | 6. 11. 38 | 2. 42 | 7. 5 | 1. 34 |
| 13 | 9. 25. 40 | 6. 34 | 6. 15. 58 | 3. 26 | 9. 27 | 1. 27 |
| 19 | 10. 15. 46 | 6. 59 | 6. 17. 33 | 3. 50 | 10. 26 | 1. 11 |
| 25 | 11. 9. 8 | 6. 25 | 6. 15. 12 | 3. 35 | 9. 17 | 0. 41 |
| **VENUS.** | | | | | | |
| 1 | 8. 23. 11 | 0. 30 S | 6. 19. 22 | 0. 20 S | 7. 54 S | 2. 28 |
| 7 | 9. 2. 41 | 1. 3 | 6. 26. 19 | 0. 44 | 10. 51 | 2. 32 |
| 13 | 9. 12. 10 | 1. 34 | 7. 3. 13 | 1. 8 | 13. 40 | 2. 36 |
| 19 | 9. 21. 40 | 2. 2 | 7. 10. 3 | 1. 34 | 16. 19 | 2. 41 |
| 25 | 10. 1. 8 | 2. 28 | 7. 16. 50 | 1. 58 | 18. 45 | 2. 46 |
| **MARS.** | | | | | | |
| 1 | 3. 26. 8 | 1. 43 N | 4. 12. 17 | 1. 8 N | 18. 13 N | 22. 16 |
| 7 | 3. 28. 52 | 1. 45 | 4. 16. 5 | 1. 10 | 17. 8 | 22. 10 |
| 13 | 4. 1. 35 | 1. 46 | 4. 19. 52 | 1. 12 | 16. 1 | 22. 3 |
| 19 | 4. 4. 16 | 1. 48 | 4. 23. 38 | 1. 14 | 14. 49 | 21. 57 |
| 25 | 4. 6. 56 | 1. 49 | 4. 27. 22 | 1. 16 | 13. 35 | 21. 50 |
| **JUPITER.** | | | | | | |
| 1 | 5. 7. 43 | 1. 8 N | 5. 7. 56 | 0. 57 N | 9. 29 N | 23. 55 |
| 7 | 5. 8. 10 | 1. 8 | 5. 9. 14 | 0. 57 | 9. 0 | 23. 38 |
| 13 | 5. 8. 37 | 1. 9 | 5. 10. 31 | 0. 58 | 8. 32 | 23. 21 |
| 19 | 5. 9. 5 | 1. 9 | 5. 11. 48 | 0. 58 | 8. 2 | 23. 4 |
| 25 | 5. 9. 32 | 1. 9 | 5. 13. 4 | 0. 58 | 7. 33 | 22. 48 |
| **SATURN.** | | | | | | |
| 1 | 7. 15. 49 | 2. 17 N | 7. 10. 41 | 2. 11 N | 12. 58 S | 3. 53 |
| 7 | 7. 16. 1 | 2. 17 | 7. 11. 13 | 2. 10 | 13. 9 | 3. 33 |
| 13 | 7. 16. 12 | 2. 16 | 7. 11. 45 | 2. 9 | 13. 20 | 3. 14 |
| 19 | 7. 16. 23 | 2. 16 | 7. 12. 17 | 2. 8 | 13. 31 | 2. 54 |
| 25 | 7. 16. 34 | 2. 16 | 7. 12. 49 | 2. 7 | 13. 41 | 2. 35 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | Tu. | 9. 6. 34. 6 | 9. 12. 33. 36 | 0. 50. 54 S | 1. 22. 4 S |
| 2 | W. | 9. 18. 36. 3 | 9. 24. 41. 55 | 1. 52. 29 | 2. 21. 49 |
| 3 | Th. | 10. 0. 51. 30 | 10. 7. 5. 21 | 2. 49. 47 | 3. 15. 59 |
| 4 | F. | 10. 13. 23. 41 | 10. 19. 46. 38 | 3. 40. 7 | 4. 1. 44 |
| 5 | Sa. | 10. 26. 14. 22 | 11. 2. 46. 49 | 4. 20. 31 | 4. 36. 4 |
| 6 | *Su.* | 11. 9. 23. 54 | 11. 16. 5. 25 | 4. 48. 7 | 4. 56. 18 |
| 7 | M. | 11. 22. 51. 2 | 11. 29. 40. 28 | 5. 0. 29 | 5. 0. 24 |
| 8 | Tu. | 0. 6. 33. 11 | 0. 13. 28. 50 | 4. 55. 58 | 4. 47. 9 |
| 9 | W. | 0. 20. 26. 51 | 0. 27. 26. 49 | 4. 34. 1 | 4. 16. 44 |
| 10 | Th. | 1. 4. 28. 17 | 1. 11. 30. 48 | 3. 55. 26 | 3. 30. 29 |
| 11 | F. | 1. 18. 34. 0 | 1. 25. 37. 35 | 3. 2. 18 | 2. 31. 14 |
| 12 | Sa. | 2. 2. 41. 17 | 2. 9. 44. 58 | 1. 57. 49 | 1. 22. 34 |
| 13 | *Su.* | 2. 16. 48. 24 | 2. 23. 51. 28 | 0. 46. 3 S | 0. 8. 51 S |
| 14 | M. | 3. 0. 54. 10 | 3. 7. 56. 18 | 0. 28. 25 N | 1. 5. 13 N |
| 15 | Tu. | 3. 14. 57. 48 | 3. 21. 58. 32 | 1. 40. 57 | 2. 15. 3 |
| 16 | W. | 3. 28. 58. 22 | 4. 5. 57. 1 | 2. 47. 1 | 3. 16. 20 |
| 17 | Th. | 4. 12. 54. 16 | 4. 19. 49. 47 | 3. 42. 37 | 4. 5. 27 |
| 18 | F. | 4. 26. 43. 15 | 5. 3. 34. 18 | 4. 24. 34 | 4. 39. 40 |
| 19 | Sa. | 5. 10. 22. 31 | 5. 17. 7. 33 | 4. 50. 46 | 4. 57. 38 |
| 20 | *Su.* | 5. 23. 49. 3 | 6. 0. 26. 42 | 5. 0. 19 | 4. 58. 54 |
| 21 | M. | 6. 7. 0. 15 | 6. 13. 29. 29 | 4. 53. 32 | 4. 44. 23 |
| 22 | Tu. | 6. 19. 54. 23 | 6. 26. 14. 50 | 4. 31. 43 | 4. 15. 47 |
| 23 | W. | 7. 2. 30. 59 | 7. 8. 42. 53 | 3. 56. 56 | 3. 35. 23 |
| 24 | Th. | 7. 14. 50. 52 | 7. 20. 55. 16 | 3. 11. 34 | 2. 45. 44 |
| 25 | F. | 7. 26. 56. 26 | 8. 2. 54. 54 | 2. 18. 13 | 1. 49. 21 |
| 26 | Sa. | 8. 8. 51. 13 | 8. 14. 45. 57 | 1. 19. 29 | 0. 48. 47 N |
| 27 | *Su.* | 8. 20. 39. 46 | 8. 26. 33. 20 | 0. 17. 38 N | 0. 13. 39 S |
| 28 | M. | 9. 2. 27. 20 | 9. 8. 22. 30 | 0. 44. 53 S | 1. 15. 44 |
| 29 | Tu. | 9. 14. 19. 27 | 9. 20. 18. 58 | 1. 45. 54 | 2. 15. 6 |
| 30 | W. | 9. 26. 21. 41 | 10. 2. 28. 13 | 2. 43. 2 | 3. 9. 23 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſcen. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declination at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | Tu. | 12 | 8. 3 | 277. 12 | 283. 47 | 24. 9 S | 24. 14 S |
| 2 | W. | 13 | 8. 54 | 290. 26 | 297. 5 | 24. 2 | 23. 32 |
| 3 | Th. | 14 | 9. 45 | 303. 45 | 310. 23 | 22. 45 | 21. 41 |
| 4 | F. | 15 | 10. 36 | 316. 59 | 323. 33 | 20. 20 | 18. 43 |
| 5 | Sa. | 16 | 11. 26 | 330. 1 | 336. 27 | 16. 52 | 14. 47 |
| 6 | *Su.* | 17 | 12. 15 | 342. 49 | 349. 9 | 12. 30 | 10. 2 |
| 7 | M. | 18 | 13. 3 | 355. 26 | 1. 42 | 7. 26 | 4. 43 S |
| 8 | Tu. | 19 | 13. 51 | 7. 59 | 14. 16 | 1. 56 S | 0. 55 N |
| 9 | W. | 20 | 14. 40 | 20. 36 | 27. 1 | 3. 46 N | 6. 35 |
| 10 | Th. | 21 | 15. 32 | 33. 32 | 40. 10 | 9. 20 | 11. 58 |
| 11 | F. | 22 | 16. 25 | 46. 58 | 53. 55 | 14. 27 | 16. 45 |
| 12 | Sa. | 23 | 17. 22 | 61. 2 | 68. 18 | 18. 49 | 20. 35 |
| 13 | *Su.* | 24 | 18. 21 | 75. 45 | 83. 19 | 22. 3 | 23. 11 |
| 14 | M. | 25 | 19. 22 | 90. 59 | 98. 43 | 23. 56 | 24. 19 |
| 15 | Tu. | 26 | 20. 22 | 106. 27 | 114. 8 | 24. 18 | 23. 54 |
| 16 | W. | 27 | 21. 20 | 121. 44 | 129. 12 | 23. 7 | 21. 59 |
| 17 | Th. | 28 | 22. 15 | 136. 30 | 143. 37 | 20. 31 | 18. 46 |
| 18 | F. | 29 | 23. 6 | 150. 31 | 157. 13 | 16. 46 | 14. 33 |
| 19 | Sa. | 30 | 23. 54 | 163. 46 | 170. 7 | 12. 10 | 9. 39 |
| 20 | *Su.* | 1 | ♂ | 176. 20 | 182. 24 | 7. 3 | 4. 24 N |
| 21 | M. | 2 | 0. 40 | 188. 22 | 194. 15 | 1. 43 N | 0. 58 S |
| 22 | Tu. | 3 | 1. 25 | 200. 5 | 205. 53 | 3. 34 S | 6. 10 |
| 23 | W. | 4 | 2. 9 | 211. 41 | 217. 30 | 8. 39 | 11. 1 |
| 24 | Th. | 5 | 2. 53 | 223. 20 | 229. 14 | 13. 15 | 15. 21 |
| 25 | F. | 6 | 3. 39 | 235. 12 | 241. 14 | 17. 15 | 18. 59 |
| 26 | Sa. | 7 | 4. 25 | 247. 21 | 253. 34 | 20. 30 | 21. 47 |
| 27 | *Su.* | 8 | 5. 13 | 259. 52 | 266. 14 | 22. 51 | 23. 39 |
| 28 | M. | 9 | 6. 3 | 272. 41 | 279. 12 | 24. 11 | 24. 28 |
| 29 | Tu. | 10 | 6. 54 | 285. 46 | 292. 21 | 24. 27 | 24. 9 |
| 30 | W. | 11 | 7. 44 | 298. 56 | 305. 51 | 23. 34 | 22. 43 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | Tu. | 14. 53 | 14. 56 | 54. 39 | 54. 48 | 5177 | 5165 |
| 2 | W. | 14. 59 | 15. 3 | 55. 0 | 55. 14 | 5149 | 5130 |
| 3 | Th. | 15. 7 | 15. 12 | 55. 29 | 55. 45 | 5111 | 5090 |
| 4 | F. | 15. 16 | 15. 21 | 56. 3 | 56. 21 | 5067 | 5044 |
| 5 | Sa. | 15. 26 | 15. 31 | 56. 40 | 56. 58 | 5015 | 4996 |
| 6 | *Su.* | 15. 36 | 15. 41 | 57. 17 | 57. 35 | 4972 | 4950 |
| 7 | M. | 15. 46 | 15. 50 | 57. 52 | 58. 8 | 4928 | 4908 |
| 8 | Tu. | 15. 54 | 15. 58 | 58. 22 | 58. 36 | 4891 | 4874 |
| 9 | W. | 16. 1 | 16. 4 | 58. 49 | 58. 58 | 4858 | 4846 |
| 10 | Th. | 16. 6 | 16. 8 | 59. 5 | 59. 12 | 4838 | 4830 |
| 11 | F. | 16. 9 | 16. 10 | 59. 17 | 59. 21 | 4823 | 4819 |
| 12 | Sa. | 16. 11 | 16. 11 | 59. 23 | 59. 25 | 4816 | 4813 |
| 13 | *Su.* | 16. 11 | 16. 11 | 59. 25 | 59. 23 | 4813 | 4816 |
| 14 | M. | 16. 10 | 16. 9 | 59. 21 | 59. 18 | 4819 | 4822 |
| 15 | Tu. | 16. 8 | 16. 6 | 59. 12 | 59. 7 | 4830 | 4835 |
| 16 | W. | 16. 5 | 16. 2 | 59. 0 | 58. 51 | 4844 | 4855 |
| 17 | Th. | 15. 59 | 15. 56 | 58. 41 | 58. 30 | 4867 | 4881 |
| 18 | F. | 15. 53 | 15. 49 | 58. 18 | 58. 5 | 4896 | 4912 |
| 19 | Sa. | 15. 45 | 15. 41 | 57. 49 | 57. 34 | 4932 | 4951 |
| 20 | *Su.* | 15. 37 | 15. 32 | 57. 17 | 57. 0 | 4972 | 4944 |
| 21 | M. | 15. 27 | 15. 22 | 56. 42 | 56. 24 | 5017 | 5040 |
| 22 | Tu. | 15. 18 | 15. 13 | 56. 7 | 55. 50 | 5062 | 5084 |
| 23 | W. | 15. 8 | 15. 4 | 55. 34 | 55. 18 | 5104 | 5125 |
| 24 | Th. | 15. 0 | 14. 57 | 55. 5 | 54. 52 | 5142 | 5159 |
| 25 | F. | 14. 54 | 14. 52 | 54. 42 | 54. 33 | 5173 | 5185 |
| 26 | Sa. | 14. 50 | 14. 49 | 54. 27 | 54. 23 | 5193 | 5198 |
| 27 | *Su.* | 14. 49 | 14. 49 | 54. 22 | 54. 23 | 5199 | 5198 |
| 28 | M. | 14. 50 | 14. 52 | 54. 27 | 54. 33 | 5193 | 5185 |
| 29 | Tu. | 14. 54 | 14. 57 | 54. 41 | 54. 52 | 5174 | 5159 |
| 30 | W. | 15. 1 | 15. 5 | 55. 6 | 55. 22 | 5141 | 5120 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | | 75. 4. 20 | 73. 43. 8 | 72. 21. 54 | 71. 0. 40 |
| 2 | α Pegaſi. | 64. 14. 44 | 62. 53. 39 | 61. 32. 42 | 60. 11. 51 |
| 3 | | 53. 30. 7 | | | |
| 3 | | 94. 8. 19 | 92. 37. 54 | 91. 7. 14 | 89. 36. 18 |
| 4 | | 81. 57. 55 | 80. 25. 30 | 78. 52. 51 | 77. 20. 0 |
| 5 | α Arietis. | 69. 32. 15 | 67. 58. 3 | 66. 23. 41 | 64. 49. 8 |
| 6 | | 56. 54. 0 | 55. 18. 34 | 53. 43. 5 | 52. 7. 33 |
| 7 | | 44. 10. 6 | | | |
| 7 | | 73. 29. 2 | 71. 47. 38 | 70. 6. 2 | 68. 24. 13 |
| 8 | | 59. 52. 8 | 58. 9. 9 | 56. 26. 0 | 54. 42. 41 |
| 9 | Aldebaran. | 46. 4. 1 | 44. 19. 54 | 42. 35. 41 | 40. 51. 22 |
| 10 | | 32. 8. 50 | 30. 24. 13 | 28. 39. 38 | 26. 55. 7 |
| 11 | | 18. 14. 22 | | | |
| 11 | | 62. 14. 42 | 60. 29. 8 | 58. 43. 33 | 56. 57. 56 |
| 12 | Pollux. | 48. 9. 49 | 46. 24. 13 | 44. 38. 39 | 42. 53. 6 |
| 13 | | 34. 6. 17 | 32. 21. 13 | 30. 36. 16 | 28. 51. 28 |
| 11 | | 120. 9. 6 | 118. 30. 56 | 116. 52. 43 | 115. 14. 26 |
| 12 | | 107. 2. 28 | 105. 23. 59 | 103. 45. 29 | 102. 6. 59 |
| 13 | | 93. 54. 27 | 92. 15. 59 | 90. 37. 31 | 88. 59. 5 |
| 14 | The Sun. | 80. 47. 16 | 79. 9. 1 | 77. 30. 49 | 75. 52. 41 |
| 15 | | 67. 42. 49 | 66. 5. 3 | 64. 27. 22 | 62. 49. 46 |
| 16 | | 54. 43. 6 | 53. 6. 6 | 51. 29. 15 | 49. 52. 32 |
| 17 | | 41. 51. 4 | 40. 15. 17 | 38. 39. 43 | 37. 4. 20 |
| 22 | | 47. 35. 1 | 46. 0. 45 | 44. 26. 46 | 42. 53. 4 |
| 23 | Antares. | 35. 9. 33 | 33. 37. 52 | 32. 6. 35 | 30. 35. 43 |
| 24 | | 23. 7. 55 | | | |
| 24 | | 74. 19. 34 | 73. 3. 21 | 71. 47. 32 | 70. 32. 7 |
| 25 | α Aquilæ. | 64. 21. 53 | 63. 9. 18 | 61. 57. 17 | 60. 45. 50 |
| 26 | | 54. 57. 57 | | | |
| 26 | | 82. 55. 12 | 81. 29. 49 | 80. 4. 31 | 78. 39. 20 |
| 27 | Fomal- | 71. 34. 46 | 70. 10. 7 | 68. 45. 32 | 67. 21. 2 |
| 28 | haut. | 60. 19. 39 | 58. 55. 34 | 57. 31. 35 | 56. 7. 42 |
| 29 | | 49. 9. 48 | | | |
| 29 | | 68. 9. 45 | 66. 49. 27 | 65. 29. 12 | 64. 9. 0 |
| 30 | α Pegaſi. | 57. 29. 35 | 56. 10. 8 | 54. 50. 55 | 53. 31. 57 |
| O.1 | | 47. 1. 54 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | α Pegasi. | 69. 39. 25 | 68. 18. 11 | 67. 57. 0 | 65. 35. 51 |
| 2 | | 58. 51. 7 | 57. 30. 33 | 56. 10. 11 | 54. 50. 2 |
| 3 | | 88. 5. 6 | 86. 33. 40 | 85. 2. 0 | 83. 30. 5 |
| 4 | α Arietis. | 75. 46. 54 | 74. 13. 33 | 72. 40. 0 | 71. 6. 14 |
| 5 | | 63. 14. 24 | 61. 39. 30 | 60. 4. 28 | 58. 29. 18 |
| 6 | | 50. 31. 59 | 48. 56. 26 | 47. 20. 55 | 45. 45. 28 |
| 7 | | 66. 42. 11 | 64. 59. 57 | 63. 17. 32 | 61. 34. 56 |
| 8 | Aldebaran. | 52. 59. 13 | 51. 15. 37 | 49. 31. 53 | 47. 48. 1 |
| 9 | | 39. 6. 58 | 37. 22. 29 | 35. 37. 58 | 33. 53. 25 |
| 10 | | 25. 10. 40 | 23. 26. 21 | 21. 42. 11 | 19. 58. 11 |
| 11 | | 55. 12. 19 | 53. 26. 41 | 51. 41. 3 | 49. 55. 26 |
| 12 | Pollux. | 41. 7. 35 | 39. 22. 8 | 37. 36. 46 | 35. 51. 30 |
| 13 | | 27. 6. 50 | | | |
| 11 | | 113. 36. 7 | 111. 57. 45 | 110. 19. 21 | 108. 40. 56 |
| 12 | | 100. 28. 28 | 98. 49. 57 | 97. 11. 28 | 95. 32. 57 |
| 13 | | 87. 20. 40 | 85. 42. 16 | 84. 3. 55 | 82. 25. 34 |
| 14 | The Sun. | 74. 14. 35 | 72. 36. 33 | 70. 58. 34 | 69. 20. 40 |
| 15 | | 61. 12. 15 | 59. 34. 48 | 57. 57. 28 | 56. 20. 14 |
| 16 | | 48. 15. 56 | 46. 39. 28 | 45. 3. 10 | 43. 27. 2 |
| 17 | | 35. 29. 11 | | | |
| 22 | Antares. | 41. 19. 42 | 39. 46. 39 | 38. 13. 56 | 36. 41. 34 |
| 23 | | 29. 5. 14 | 27. 35. 12 | 26. 5. 38 | 24. 36. 32 |
| 24 | α Aquilæ. | 69. 17. 8 | 68. 2. 36 | 66. 48. 32 | 65. 34. 58 |
| 25 | | 59. 34. 58 | 58. 24. 44 | 57. 15. 8 | 56. 6. 12 |
| 26 | Fomalhaut. | 77. 14. 14 | 75. 49. 14 | 74. 24. 20 | 72. 59. 31 |
| 27 | | 65. 56. 37 | 64. 32. 16 | 63. 7. 59 | 61. 43. 47 |
| 28 | | 54. 43. 54 | 53. 20. 14 | 51. 56. 37 | 50. 33. 11 |
| 29 | α Pegasi. | 62. 48. 52 | 61. 28. 50 | 60. 8. 57 | 58. 49. 11 |
| 30 | | 52. 13. 14 | 50. 54. 51 | 49. 36. 49 | 48. 19. 10 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | The Sun. | 117. 30. 52 | 118. 53. 10 | 120. 15. 35 | 121. 38. 10 |
| 1 | | 30. 5. 16 | 31. 33. 10 | 33. 1. 22 | 34. 29. 52 |
| 2 | | 41. 56. 39 | 43. 26. 51 | 44. 57. 19 | 46. 28. 3 |
| 3 | | 54. 5. 40 | 55. 38. 0 | 57. 10. 38 | 58. 43. 32 |
| 4 | Antares. | 66. 32. 16 | 68. 6. 52 | 69. 41. 43 | 71. 16. 55 |
| 5 | | 79. 17. 6 | 80. 53. 59 | 82. 31. 9 | 84. 8. 36 |
| 6 | | 92. 19. 54 | 93. 58. 58 | 95. 38. 17 | 97. 17. 52 |
| 7 | | 105. 39. 18 | 107. 20. 16 | 109. 1. 28 | 110. 42. 53 |
| 8 | | 38. 18. 20 | 39. 50. 26 | 41. 23. 25 | 42. 57. 16 |
| 9 | Fomal- | 50. 56. 32 | 52. 33. 59 | 54. 11. 51 | 55. 50. 8 |
| 10 | haut. | 64. 6. 44 | 65. 46. 53 | 67. 27. 14 | 69. 7. 47 |
| 11 | | 77. 33. 0 | 79. 14. 26 | 80. 55. 57 | 82. 37. 33 |
| 12 | | 30. 25. 52 | 31. 59. 59 | 33. 35. 11 | 35. 11. 25 |
| 13 | | 43. 22. 48 | 45. 2. 32 | 46. 42. 34 | 48. 22. 58 |
| 14 | α Arietis | 56. 48. 40 | 58. 30. 18 | 60. 12. 4 | 61. 53. 55 |
| 15 | | 70. 24. 9 | 72. 6. 18 | 73. 48. 26 | 75. 30. 34 |
| 16 | | 84. 0. 44 | 85. 42. 35 | 87. 24. 22 | 89. 6. 3 |
| 17 | Pollux. | 22. 50. 19 | 24. 32. 15 | 26. 14. 17 | 27. 56. 26 |
| 18 | | 36. 27. 2 | 38. 8. 56 | 39. 50. 45 | 41. 32. 25 |
| 24 | | 43. 27. 40 | 44. 51. 6 | 46. 14. 22 | 47. 37. 28 |
| 25 | | 54. 30. 39 | 55. 52. 50 | 57. 14. 54 | 58. 36. 51 |
| 26 | | 65. 24. 55 | 66. 46. 15 | 68. 7. 31 | 69. 28. 43 |
| 27 | The Sun. | 76. 14. 5 | 77. 35. 5 | 78. 56. 6 | 80. 17. 7 |
| 28 | | 87. 2. 38 | 88. 23. 54 | 89. 45. 15 | 91. 6. 42 |
| 29 | | 97. 55. 27 | 99. 17. 36 | 100. 39. 55 | 102. 2. 24 |
| 30 | | 108. 57. 30 | 110. 21. 8 | 111. 45. 0 | 113. 9. 5 |
| O. 1 | | 120. 13. 18 | | | |
| 28 | | 26. 1. 58 | 27. 28. 31 | 28. 55. 21 | 30. 22. 27 |
| 29 | Antares. | 37. 41. 47 | 39. 10. 21 | 40. 39. 10 | 42. 8. 13 |
| 30 | | 49. 37. 8 | 51. 7. 40 | 52. 38. 28 | 54. 9. 32 |
| O. 1 | | 61. 49. 11 | | | |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | The Sun. | 123. 0. 51 | | | |
| 1 | Antares. | 35. 58. 39 | 37. 27. 44 | 38. 57. 5 | 40. 26. 44 |
| 2 | | 47. 59. 3 | 49. 30. 18 | 51. 1. 49 | 52. 33. 36 |
| 3 | | 60. 16. 44 | 61. 50. 11 | 63. 23. 56 | 64. 57. 58 |
| 4 | | 72. 52. 22 | 74. 28. 7 | 76. 4. 10 | 77. 40. 29 |
| 5 | | 85. 46. 19 | 87. 24. 19 | 89. 2. 34 | 90. 41. 6 |
| 6 | | 98. 57. 41 | 100. 37. 44 | 102. 18. 1 | 103. 58. 33 |
| 7 | | 112. 24. 31 | | | |
| 7 | Fomalhaut. | 32. 21. 0 | 33. 48. 31 | 35. 17. 17 | 36. 47. 14 |
| 8 | | 44. 31. 58 | 46. 7. 14 | 47. 43. 5 | 49. 19. 31 |
| 9 | | 57. 28. 50 | 59. 7. 52 | 60. 47. 11 | 62. 26. 49 |
| 10 | | 70. 48. 32 | 72. 29. 27 | 74. 10. 30 | 75. 51. 41 |
| 11 | | 84. 19. 14 | | | |
| 11 | ♈ Arietis. | 24. 24. 10 | 25. 52. 6 | 27. 21. 48 | 28. 53. 6 |
| 12 | | 36. 48. 34 | 38. 26. 17 | 40. 4. 33 | 41. 43. 24 |
| 13 | | 50. 3. 43 | 51. 44. 39 | 53. 25. 47 | 55. 7. 8 |
| 14 | | 63. 35. 52 | 65. 17. 52 | 66. 59. 55 | 68. 42. 1 |
| 15 | | 77. 12. 41 | 78. 54. 46 | 80. 36. 49 | 82. 18. 48 |
| 16 | | 90. 47. 38 | | | |
| 16 | Pollux. | 16. 5. 22 | 17. 46. 6 | 19. 27. 12 | 21. 8. 37 |
| 17 | | 29. 38. 41 | 31. 20. 50 | 33. 2. 57 | 34. 45. 1 |
| 18 | | 43. 13. 56 | | | |
| 23 | The Sun. | 37. 52. 12 | 39. 16. 20 | 40. 40. 17 | 42. 4. 4 |
| 24 | | 49. 0. 25 | 50. 23. 12 | 51. 45. 50 | 53. 8. 19 |
| 25 | | 59. 58. 40 | 61. 20. 22 | 62. 41. 59 | 64. 3. 30 |
| 26 | | 70. 49. 51 | 72. 10. 56 | 73. 32. 1 | 74. 53. 4 |
| 27 | | 81. 38. 8 | 82. 59. 11 | 84. 20. 17 | 85. 41. 26 |
| 28 | | 92. 28. 13 | 93. 49. 50 | 95. 11. 35 | 96. 33. 27 |
| 29 | | 103. 25. 2 | 104. 47. 51 | 106. 10. 52 | 107. 34. 5 |
| 30 | | 114. 33. 25 | 115. 58. 0 | 117. 22. 50 | 118. 47. 56 |
| 28 | Antares. | 31. 49. 49 | 33. 17. 26 | 34. 45. 19 | 36. 13. 25 |
| 29 | | 43. 37. 30 | 45. 7. 2 | 46. 36. 49 | 48. 6. 51 |
| 30 | | 55. 40. 56 | 57. 12. 33 | 58. 44. 28 | 60. 16. 42 |

The Satellites of JUPITER are not viſible this Month, JUPITER being too near the SUN.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | Th. | Remigius, |
| 2 | F. | |
| 3 | Sa. | |
| 4 | *Su.* | *16th Sunday after Trinity.* |
| 5 | M. | |
| 6 | Tu. | Faith. |
| 7 | W. | |
| 8 | Th. | |
| 9 | F. | St. Denys. |
| 10 | Sa. | *Oxf. & Camb. Term begins* |
| 11 | *Su.* | *17th Sunday after Trinity.* |
| 12 | M. | ~~Oxf. and Cant. Fer. begin.~~ |
| 13 | Tu. | Transf. of K. Edw. Conf. |
| 14 | W. | |
| 15 | Th. | |
| 16 | F. | |
| 17 | Sa. | Etheldred. |
| 18 | *Su.* | *18th Su. af. Tr. St. Luke.* |
| 19 | M. | |
| 20 | Tu. | |
| 21 | W. | |
| 22 | Th. | |
| 23 | F. | |
| 24 | Sa. | [*Acceſ.* Criſp. |
| 25 | *Su.* | *19th S. aft. Tr. K. Geo. III.* |
| 26 | M. | *K. Geo. III. procl.* 1760. |
| 27 | Tu. | |
| 28 | W. | *St. Simon and St. Jude.* |
| 29 | Th. | |
| 30 | F. | |
| 31 | Sa. | |

## Phaſes of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| Full Moon — | 5. | 20. | 1 |
| Laſt Quarter — | 12. | 13. | 47 |
| New Moon — | 19. | 21. | 30 |
| Firſt Quarter — | 28. | 2. | 1 |

D. Other Phenomena.

1. ☾ ☌ ♍ 16h. 10′.
3. ☾ 1 ad ♆ ♒ 16h. 6′.
☾ 2 ad ♆ ♒ 16h. 51′.
☾ 3 ad ♆ ♒ 16h. 59′.
6. ☿ ☍ ♏ diff. Lat. 43′.
7. ☾ 1 ad ξ Ceti 1h. 52′.
9. ☾ ☌ ♉ 10h. 53′.
10. ☾ ☍ ♉ 0h. 46′.
11. ☿ Stationary.
☾ H ♊ 0h. 28′.
☾ ☌ ♊ 15h. 40′.
13. ☾ ☍ ♑ 15h. 5′.
☿ Antares diff. Lat. 1°. 28′.
15. ☾ ☍ ☊ 2h. 53′.
16. ☾ ☌ ☋ 14h. 6′.
17. ☿ ☍ ♐ diff. Lat. 57′.
20. ☾ ☌ ♐ 5h. 48′.
21. ☾ ☌ ♄ 9h. 27′.
☾ ☌ ♎ 21h. 57′.
22. ☾ ☍ ♏ 14h. 12′.
☾ ☍ ♏ 17h. 7′.
☉ enters ♏ 19h. 36′.
23. ☿ ☌ ♏ diff. Lat. 15′.
25. ☾ ☌ ♃ 9h. 24′.
29. ☾ ☌ ♍ 1h. 7′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | Th. | 6. 8. 21. 57 | 12. 30. 43,8 | 3. 19. 18 | 10. 25,4 | 18,7 |
| 2 | F. | 6. 9. 21. 4 | 12. 34. 21,5 | 3. 42. 37 | 10. 44,1 | 18,5 |
| 3 | Sa. | 6. 10. 20. 14 | 12. 37. 59,6 | 4. 5. 53 | 11. 2,6 | 18,1 |
| 4 | *Su.* | 6. 11. 19. 25 | 12. 41. 38,0 | 4. 29. 5 | 11. 20,7 | 17,8 |
| 5 | M. | 6. 12. 18. 38 | 12. 45. 16,7 | 4. 52. 15 | 11. 38,5 | 17,4 |
| 6 | Tu. | 6. 13. 17. 53 | 12. 48. 55,8 | 5. 15. 21 | 11. 55,9 | 17,0 |
| 7 | W. | 6. 14. 17. 10 | 12. 52. 35,3 | 5. 38. 23 | 12. 12,9 | 16,6 |
| 8 | Th. | 6. 15. 16. 30 | 12. 56. 15,3 | 6. 1. 21 | 12. 29,5 | 16,1 |
| 9 | F. | 6. 16. 15. 51 | 12. 59. 55,7 | 6. 24. 14 | 12. 45,6 | 15,6 |
| 10 | Sa. | 6. 17. 15. 16 | 13. 3. 36,5 | 6. 47. 2 | 13. 1,2 | 15,2 |
| 11 | *Su.* | 6. 18. 14. 42 | 13. 7. 17,9 | 7. 9. 45 | 13. 16,4 | 14,6 |
| 12 | M. | 6. 19. 14. 11 | 13. 10. 59,7 | 7. 32. 22 | 13. 31,0 | 14,1 |
| 13 | Tu. | 6. 20. 13. 42 | 13. 14. 42,2 | 7. 54. 53 | 13. 45,1 | 13,6 |
| 14 | W. | 6. 21. 13. 15 | 13. 18. 25,1 | 8. 17. 17 | 13. 58,7 | 13,0 |
| 15 | Th. | 6. 22. 12. 51 | 13. 22. 8,6 | 8. 39. 35 | 14. 11,7 | 12,4 |
| 16 | F. | 6. 23. 12. 29 | 13. 25. 52,8 | 9. 1. 45 | 14. 24,1 | 11,8 |
| 17 | Sa. | 6. 24. 12. 10 | 13. 29. 37,5 | 9. 23. 48 | 14. 35,9 | 11,2 |
| 18 | *Su.* | 6. 25. 11. 53 | 13. 33. 22,8 | 9. 45. 42 | 14. 47,1 | 10,5 |
| 19 | M. | 6. 26. 11. 38 | 13. 37. 8,8 | 10. 7. 28 | 14. 57,6 | 9,9 |
| 20 | Tu. | 6. 27. 11. 26 | 13. 40. 55,4 | 10. 29. 6 | 15. 7,5 | 9,2 |
| 21 | W. | 6. 28. 11. 15 | 13. 44. 42,7 | 10. 50. 34 | 15. 16,7 | 8,6 |
| 22 | Th. | 6. 29. 11. 6 | 13. 48. 30,7 | 11. 11. 52 | 15. 25,3 | 8,0 |
| 23 | F. | 7. 0. 10. 59 | 13. 52. 19,3 | 11. 33. 0 | 15. 33,3 | 7,2 |
| 24 | Sa. | 7. 1. 10. 54 | 13. 56. 8,6 | 11. 53. 57 | 15. 40,5 | 6,5 |
| 25 | *Su.* | 7. 2. 10. 51 | 13. 59. 58,6 | 12. 14. 44 | 15. 47,0 | 5,9 |
| 26 | M. | 7. 3. 10. 49 | 14. 3. 49,3 | 12. 35. 19 | 15. 52,9 | 5,1 |
| 27 | Tu. | 7. 4. 10. 49 | 14. 7. 40,7 | 12. 55. 42 | 15. 58,0 | 4,4 |
| 28 | W. | 7. 5. 10. 50 | 14. 11. 32,9 | 13. 15. 53 | 16. 2,4 | 3,6 |
| 29 | Th. | 7. 6. 10. 53 | 14. 15. 25,8 | 13. 35. 51 | 16. 6,0 | 2,9 |
| 30 | F. | 7. 7. 10. 58 | 14. 19. 19,4 | 13. 55. 37 | 16. 8,9 | 2,2 |
| 31 | Sa. | 7. 8. 11. 4 | 14. 23. 13,8 | 14. 15. 8 | 16. 11,1 | 1,3 |

| Days of the Month. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 2,8 | 1. 4,3 | 2. 27,8 | 9. 999969 | 2. 24. 15 |
| 7 | 16. 4,5 | 1. 4,6 | 2. 28,4 | 9. 999213 | 2. 23. 56 |
| 13 | 16. 6,1 | 1. 5,0 | 2. 28,9 | 9. 998480 | 2. 23. 37 |
| 19 | 16. 7,8 | 1. 5,5 | 2. 29,3 | 9. 997765 | 2. 23. 18 |
| 25 | 16. 9,4 | 1. 6,1 | 2. 29,8 | 9. 997047 | 2. 22. 59 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Immersions. | | II. Satellite. Immersions. | | III. Satellite. | |
|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. |
| 1 | 0. 44. 13 | 3 | 9. 15. 21 | 6 | 7. 51. 20 I |
| 2 | 19. 13. 13 | 6 | 22. 34. 0 | 6 | 11. 6. 38 E |
| 4 | 13. 42. 15 | 10 | 11. 52. 23 | 13 | 11. 51. 36 I |
| 6 | 8. 11. 13 | 14 | 1. 10. 41 | 13 | 15. 6. 16 E |
| 8 | 2. 40. 10 | 17 | 14. 28. 43 | 20 | 15*51. 11 I |
| 9 | 21. 9. 4 | 21 | 3. 46. 38 | 20 | 19. 5. 7 E |
| 11 | 15. 38. 0 | 24 | 17* 4. 21 | 27 | 19. 50. 4 I |
| 13 | 10. 6. 49 | 28 | 6. 21. 47 | 27 | 23. 3. 14 E |
| 15 | 4. 35. 42 | 31 | 19. 39. 5 | | |
| 16 | 23. 4. 28 | | | IV. Satellite. | |
| 18 | 17*33. 14 | | | | |
| 20 | 12. 1. 58 | | | 6 | 15. 59. 36 I |
| 22 | 6. 30. 40 | | | 6 | 20. 9. 0 E |
| 24 | 0. 59. 17 | | | 23 | 10. 1. 7 I |
| 25 | 19. 27. 57 | | | 23 | 14. 6. 33 E |
| 27 | 13. 56. 30 | | | | |
| 29 | 8. 25. 4 | | | | |
| 31 | 2. 53. 31 | | | | |

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** | | | | | | |
| 1 | 0. 7. 1 | 4. 24 S | 6. 9. 4 | 2. 19 S | 5. 43 S | 23. 52 |
| 7 | 1. 10. 13 | 0. 42 S | 6. 3. 19 | 0. 18 S | 1. 36 | 23. 15 |
| 13 | 2. 17. 24 | 3. 40 N | 6. 2. 59 | 1. 18 N | 0. 0 | 22. 58 |
| 19 | 3. 24. 22 | 6. 30 | 6. 8. 16 | 2. 1 | 1. 26 S | 22. 58 |
| 25 | 4. 26. 53 | 6. 52 | 6. 16. 42 | 2. 1 | 4. 42 | 23. 6 |
| **VENUS.** | | | | | | |
| 1 | 10. 10. 36 | 2. 49 S | 7. 23. 32 | 2. 21 S | 20. 57 S | 2. 51 |
| 7 | 10. 20. 6 | 3. 5 | 8. 0. 8 | 2. 44 | 22. 52 | 2. 56 |
| 13 | 10. 29. 35 | 3. 16 | 8. 6. 36 | 3. 4 | 24. 27 | 3. 1 |
| 19 | 11. 9. 6 | 3. 22 | 8. 12. 56 | 3. 20 | 25. 41 | 3. 7 |
| 25 | 11. 18. 37 | 3. 23 | 8. 19. 8 | 3. 35 | 26. 35 | 3. 11 |
| **MARS.** | | | | | | |
| 1 | 4. 9. 36 | 1. 50 N | 5. 1. 6 | 1. 18 N | 12. 18 N | 21. 42 |
| 7 | 4. 12. 15 | 1. 50 | 5. 4. 49 | 1. 19 | 10. 59 | 21. 35 |
| 13 | 4. 14. 54 | 1. 51 | 5. 8. 30 | 1. 21 | 9. 39 | 21. 26 |
| 19 | 4. 17. 33 | 1. 51 | 5. 12. 11 | 1. 23 | 8. 16 | 21. 18 |
| 25 | 4. 20. 11 | 1. 51 | 5. 15. 50 | 1. 24 | 6. 53 | 21. 9 |
| **JUPITER.** | | | | | | |
| 1 | 5. 10. 1 | 1. 9 N | 5. 14. 20 | 1. 0 N | 7. 5 N | 22. 30 |
| 7 | 5. 10. 29 | 1. 10 | 5. 15. 34 | 1. 0 | 6. 37 | 22. 13 |
| 13 | 5. 10. 56 | 1. 10 | 5. 16. 46 | 1. 1 | 6. 10 | 21. 55 |
| 19 | 5. 11. 24 | 1. 10 | 5. 17. 56 | 1. 2 | 5. 43 | 21. 37 |
| 25 | 5. 11. 51 | 1. 11 | 5. 19. 4 | 1. 3 | 5. 18 | 21. 18 |
| **SATURN.** | | | | | | |
| 1 | 7. 16. 45 | 2. 16 N | 7. 13. 26 | 2. 6 N | 13. 55 S | 2. 15 |
| 7 | 7. 16. 56 | 2. 16 | 7. 14. 4 | 2. 5 | 14. 5 | 1. 56 |
| 13 | 7. 17. 7 | 2. 15 | 7. 14. 44 | 2. 4 | 14. 18 | 1. 37 |
| 19 | 7. 17. 18 | 2. 15 | 7. 15. 25 | 2. 4 | 14. 30 | 1. 17 |
| 25 | 7. 17. 29 | 2. 15 | 7. 16. 7 | 2. 3 | 14. 43 | 0. 57 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | Th. | 10. 8. 39. 8 | 10. 14. 55. 2 | 3. 33. 47 S | 3. 55. 59 S |
| 2 | F. | 10. 21. 16. 6 | 10. 27. 42. 57 | 4. 15. 32 | 4. 32. 7 |
| 3 | Sa. | 11. 4. 15. 33 | 11. 10. 54. 11 | 4. 45. 24 | 4. 55. 2 |
| 4 | *Su.* | 11. 17. 38. 44 | 11. 24. 29. 2 | 5. 0. 44 | 5. 2. 14 |
| 5 | M. | 0. 1. 24. 38 | 0. 8. 25. 13 | 4. 59. 18 | 4. 51. 50 |
| 6 | Tu. | 0. 15. 30. 4 | 0. 22. 38. 35 | 4. 39. 50 | 4 23. 22 |
| 7 | W. | 0. 29. 49. 54 | 1. 7. 3. 24 | 4. 2. 37 | 3. 37. 50 |
| 8 | Th. | 1. 14. 18. 1 | 1. 21. 33. 13 | 3. 9. 26 | 2. 37. 53 |
| 9 | F. | 1. 28. 48. 9 | 2. 6. 2. 14 | 2. 3. 45 | 1. 27. 38 |
| 10 | Sa. | 2. 13. 14. 57 | 2. 20. 25. 51 | 0. 50. 12 S | 0. 12. 4 S |
| 11 | *Su.* | 2. 27. 34. 37 | 3. 4. 41. 0 | 0. 26. 6 N | 1. 3. 41 N |
| 12 | M. | 3. 11. 44. 52 | 3. 18. 46. 5 | 1. 40. 9 | 2. 14. 40 |
| 13 | Tu. | 3. 25. 44. 39 | 4. 2. 40. 26 | 2. 47. 3 | 3. 16. 45 |
| 14 | W. | 4. 9. 33. 33 | 4. 16. 23. 52 | 3. 43. 20 | 4. 6. 35 |
| 15 | Th. | 4. 23. 11. 28 | 4. 29. 56. 15 | 4. 26. 8 | 4. 41. 48 |
| 16 | F. | 5. 6. 38. 13 | 5. 13. 17. 14 | 4. 53. 31 | 5. 1. 6 |
| 17 | Sa. | 5. 19. 53. 22 | 5. 26. 26. 24 | 5. 4. 39 | 5. 4. 7 |
| 18 | *Su.* | 6. 2. 56. 17 | 6. 9. 23. 3 | 4. 59. 39 | 4. 51. 22 |
| 19 | M. | 6. 15. 46. 30 | 6. 22. 6. 38 | 4. 39. 30 | 4. 24. 15 |
| 20 | Tu. | 6. 28. 23. 25 | 7. 4. 36. 54 | 4. 5. 54 | 3. 44. 43 |
| 21 | W. | 7. 10. 47. 7 | 7. 16. 54. 12 | 3. 21. 4 | 2. 55. 13 |
| 22 | Th. | 7. 22. 58. 21 | 7. 28. 59. 40 | 2. 27. 33 | 1. 58. 24 |
| 23 | F. | 8. 4. 58. 36 | 8. 10. 55. 19 | 1. 28. 4 | 0. 56. 55 N |
| 24 | Sa. | 8. 16. 50. 18 | 8. 22. 44. 16 | 0. 25. 16 N | 0. 6. 37 S |
| 25 | *Su.* | 8. 28. 37. 23 | 9. 4. 30. 22 | 0. 38. 23 S | 1. 9. 45 |
| 26 | M. | 9. 10. 23. 48 | 9. 16. 18. 19 | 1. 40. 27 | 2. 10. 11 |
| 27 | Tu. | 9. 22. 14. 33 | 9. 28. 13. 13 | 2. 38. 36 | 3. 5. 35 |
| 28 | W. | 10. 4. 14. 53 | 10. 10. 20. 21 | 3. 30. 42 | 3. 53. 41 |
| 29 | Th. | 10. 16. 30. 7 | 10. 22. 44. 54 | 4. 14. 16 | 4. 32. 5 |
| 30 | F. | 10. 29. 5. 11 | 11. 5. 31. 28 | 4. 46. 53 | 4. 58. 16 |
| 31 | Sa. | 11. 12. 4. 10 | 11. 18. 43. 26 | 5. 6. 0 | 5. 9. 45 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | Th. | 12 | 8. 35 | 312. 5 | 318. 36 | 21. 33 S | 20. 8 S |
| 2 | F. | 13 | 9. 24 | 325. 5 | 331. 32 | 18. 28 | 16. 32 |
| 3 | Sa. | 14 | 10. 14 | 337. 56 | 344. 17 | 14. 24 | 12. 2 |
| 4 | *Su.* | 15 | 11. 3 | 350. 37 | 356. 57 | 9. 30 | 6. 49 |
| 5 | M. | 16 | 11. 51 | 3. 17 | 9. 39 | 4. 1 S | 1. 8 S |
| 6 | Tu. | 17 | 12. 41 | 16. 4 | 22. 35 | 1. 48 N | 4. 45 N |
| 7 | W. | 18 | 13. 32 | 29. 11 | 35. 55 | 7. 38 | 10. 27 |
| 8 | Th. | 19 | 14. 27 | 42. 48 | 49. 50 | 13. 8 | 15. 38 |
| 9 | F. | 20 | 15. 24 | 57. 2 | 64. 25 | 17. 54 | 19. 54 |
| 10 | Sa. | 21 | 16. 24 | 71. 57 | 79. 36 | 21. 35 | 22. 55 |
| 11 | *Su.* | 22 | 17. 25 | 87. 21 | 95. 9 | 23. 53 | 24. 27 |
| 12 | M. | 23 | 18. 25 | 102. 56 | 110. 42 | 24. 37 | 24. 23 |
| 13 | Tu. | 24 | 19. 23 | 118. 17 | 125. 46 | 23. 45 | 22. 47 |
| 14 | W. | 25 | 20. 18 | 133. 4 | 140. 10 | 21. 28 | 19. 51 |
| 15 | Th. | 26 | 21. 9 | 147. 5 | 153. 45 | 17. 59 | 15. 54 |
| 16 | F. | 27 | 21. 57 | 160. 15 | 166. 34 | 13. 38 | 11. 13 |
| 17 | Sa. | 28 | 22. 43 | 172. 44 | 178. 46 | 8. 41 | 6. 4 |
| 18 | *Su.* | 29 | 23. 27 | 184. 41 | 190. 32 | 3. 25 N | 0. 44 N |
| 19 | M. | 1 | ♂ | 196. 19 | 202. 5 | 1. 55 S | 4. 32 S |
| 20 | Tu. | 2 | 0. 11 | 207. 51 | 213. 38 | 7. 5 | 9. 33 |
| 21 | W. | 3 | 0. 55 | 219. 26 | 225. 17 | 11. 53 | 14. 6 |
| 22 | Th. | 4 | 1. 40 | 231. 13 | 237. 13 | 16. 9 | 18. 2 |
| 23 | F. | 5 | 2. 26 | 243. 18 | 249. 29 | 19. 42 | 21. 10 |
| 24 | Sa. | 6 | 3. 13 | 255. 45 | 262. 5 | 22. 24 | 23. 23 |
| 25 | *Su.* | 7 | 4. 2 | 268. 30 | 274. 57 | 24. 6 | 24. 33 |
| 26 | M. | 8 | 4. 52 | 281. 27 | 287. 59 | 24. 44 | 24. 38 |
| 27 | Tu. | 9 | 5. 42 | 294. 30 | 301. 0 | 24. 14 | 23. 34 |
| 28 | W. | 10 | 6. 32 | 307. 29 | 313. 56 | 22. 37 | 21. 24 |
| 29 | Th. | 11 | 7. 20 | 320. 19 | 326. 40 | 19. 56 | 18. 14 |
| 30 | F. | 12 | 8. 8 | 332. 58 | 339. 13 | 16. 17 | 14. 7 |
| 31 | Sa. | 13 | 8. 56 | 345. 27 | 351. 41 | 11. 45 | 9. 13 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | Th. | 15. 10 | 15. 16 | 55. 40 | 56. 0 | 5097 | 5071 |
| 2 | F. | 15. 22 | 15. 28 | 56. 22 | 56. 44 | 5042 | 5014 |
| 3 | Sa. | 15. 34 | 15. 40 | 57. 8 | 57. 31 | 4984 | 4955 |
| 4 | *Su.* | 15. 47 | 15. 53 | 57. 54 | 58. 17 | 4926 | 4897 |
| 5 | M. | 15. 59 | 16. 4 | 58. 39 | 58. 58 | 4870 | 4846 |
| 6 | Tu. | 16. 9 | 16. 13 | 59. 15 | 59. 30 | 4826 | 4808 |
| 7 | W. | 16. 16 | 16. 19 | 59. 43 | 59. 53 | 4792 | 4779 |
| 8 | Th. | 16. 21 | 16. 22 | 59. 59 | 60. 3 | 4772 | 4768 |
| 9 | F. | 16. 22 | 16. 21 | 60. 4 | 60. 2 | 4766 | 4769 |
| 10 | Sa. | 16. 20 | 16. 18 | 59. 58 | 59. 51 | 4773 | 4782 |
| 11 | *Su.* | 16. 16 | 16. 13 | 59. 42 | 59. 32 | 4793 | 4805 |
| 12 | M. | 16. 10 | 16. 7 | 59. 21 | 59. 9 | 4819 | 4833 |
| 13 | Tu. | 16. 3 | 16. 0 | 58. 56 | 58. 42 | 4849 | 4866 |
| 14 | W. | 15. 56 | 15. 52 | 58. 28 | 58. 14 | 4883 | 4901 |
| 15 | Th. | 15. 48 | 15. 44 | 58. 0 | 57. 45 | 4918 | 4937 |
| 16 | F. | 15. 40 | 15. 36 | 57. 30 | 57. 15 | 4956 | 4975 |
| 17 | Sa. | 15. 32 | 15. 28 | 57. 0 | 56. 45 | 4994 | 5013 |
| 18 | *Su.* | 15. 24 | 15. 20 | 56. 30 | 56. 15 | 5032 | 5051 |
| 19 | M. | 15. 16 | 15. 12 | 56. 0 | 55. 46 | 5071 | 5089 |
| 20 | Tu. | 15. 8 | 15. 5 | 55. 33 | 55. 20 | 5106 | 5123 |
| 21 | W. | 15. 1 | 14. 58 | 55. 7 | 54. 56 | 5140 | 5154 |
| 22 | Th. | 14. 55 | 14. 53 | 54. 45 | 54. 36 | 5169 | 5181 |
| 23 | F. | 14. 50 | 14. 49 | 54. 28 | 54. 22 | 5191 | 5199 |
| 24 | Sa. | 14. 48 | 14. 47 | 54. 18 | 54. 16 | 5205 | 5207 |
| 25 | *Su.* | 14. 47 | 14. 47 | 54. 15 | 54. 17 | 5209 | 5206 |
| 26 | M. | 14. 49 | 14. 50 | 54. 21 | 54. 27 | 5201 | 5193 |
| 27 | Tu. | 14. 53 | 14. 56 | 54. 37 | 54. 48 | 5179 | 5165 |
| 28 | W. | 15. 0 | 15. 5 | 55. 2 | 55. 20 | 5146 | 5123 |
| 29 | Th. | 15. 10 | 15. 16 | 55. 39 | 56. 0 | 5098 | 5071 |
| 30 | F. | 15. 22 | 15. 29 | 56. 23 | 56. 48 | 5041 | 5009 |
| 31 | Sa. | 15. 36 | 15. 43 | 57. 15 | 57. 42 | 4975 | 4941 |

Distances of ☽'s Center from ☉, and from Stars east of her.

| Days. | Stars Names. | Noon. D. M. S. | 3 Hours. D. M. S. | 6 Hours. D. M. S. | 9 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | | 86. 36. 15 | 85. 5. 26 | 83. 34. 22 | 82. 3. 2 |
| 2 | α Arietis. | 74. 22. 21 | 72. 49. 20 | 71. 16. 3 | 69. 42. 29 |
| 3 | | 61. 50. 52 | 60. 15. 48 | 58. 40. 31 | 57. 5. 0 |
| 4 | | 78. 39. 26 | 76. 58. 1 | 75. 16. 16 | 73. 34. 11 |
| 5 | | 64. 58. 55 | 63. 14. 54 | 61. 30. 37 | 59. 46. 2 |
| 6 | Aldebaran. | 50. 59. 13 | 49. 13. 7 | 47. 26. 50 | 45. 40. 22 |
| 7 | | 36. 49. 38 | 34. 58. 17 | 33. 10. 54 | 31. 23. 30 |
| 8 | | 22. 27. 4 | 20. 40. 19 | 18. 53. 54 | 17. 7. 51 |
| 9 | Pollux. | 52. 0. 15 | 50. 11. 50 | 48. 23. 30 | 46. 35. 16 |
| 10 | | 37. 35. 42 | 35. 48. 15 | 34. 0. 59 | 32. 13. 55 |
| 11 | | 59. 10. 9 | 57. 23. 17 | 55. 36. 36 | 53. 50. 6 |
| 12 | Regulus. | 45. 0. 27 | 43. 15. 8 | 41. 30. 3 | 39. 45. 12 |
| 13 | | 31. 4. 35 | | | |
| 10 | | 124. 0. 4 | 122. 19. 41 | 120. 39. 24 | 118. 59. 13 |
| 11 | | 110. 40. 2 | 109. 0. 37 | 107. 21. 21 | 105. 42. 14 |
| 12 | | 97. 29. 7 | 95. 51. 1 | 94. 13. 6 | 92. 35. 21 |
| 13 | The Sun. | 84. 29. 26 | 82. 52. 51 | 81. 16. 27 | 79. 40. 15 |
| 14 | | 71. 42. 6 | 70. 7. 5 | 68. 32. 16 | 66. 57. 40 |
| 15 | | 59. 7. 34 | 57. 34. 10 | 56. 0. 58 | 54. 27. 58 |
| 16 | | 46. 46. 6 | 45. 14. 22 | 43. 42. 52 | 42. 11. 35 |
| 22 | α Aquilæ. | 67. 40. 30 | 66. 26. 33 | 65. 13. 7 | 64. 0. 11 |
| 23 | | 58. 3. 53 | 56. 54. 33 | 55. 45. 55 | 54. 38. 3 |
| 24 | Fomalhaut. | 75. 10. 5 | 73. 45. 0 | 72. 20. 1 | 70. 55. 10 |
| 25 | | 63. 52. 50 | 62. 28. 44 | 61. 4. 45 | 59. 40. 54 |
| 26 | | 52. 43. 41 | 51. 20. 42 | 49. 57. 54 | 48. 35. 16 |
| 27 | α Pegasi. | 61. 12. 21 | 59. 53. 38 | 58. 35. 8 | 57. 16. 51 |
| 28 | | 50. 49. 22 | 49. 32. 53 | 48. 16. 51 | 47. 1. 14 |
| 29 | α Arietis. | 79. 1. 50 | 77. 31. 32 | 76. 0. 59 | 74. 30. 11 |
| 30 | | 66. 52. 7 | 65. 19. 41 | 63. 46. 59 | 62. 14. 1 |
| 31 | Aldebaran. | 84. 11. 13 | 82. 32. 40 | 80. 53. 43 | 79. 14. 22 |
| N. 1 | | 70. 51. 19 | | | |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

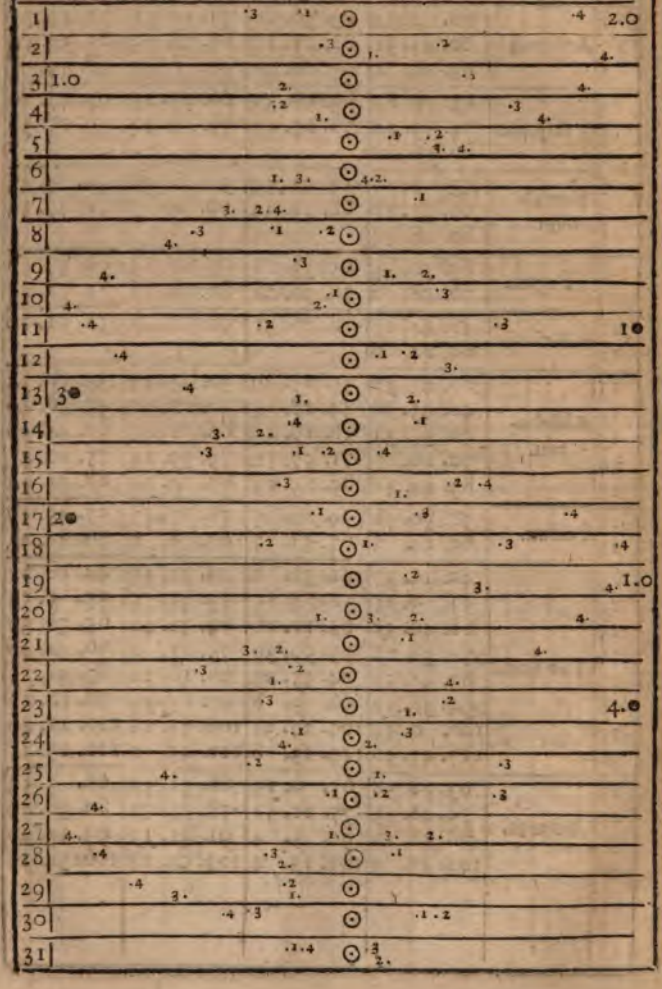
| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | | 80. 31. 27 | 78. 59. 35 | 77. 27. 27 | 75. 55. 2 |
| 2 | α Arietis. | 68. 8. 40 | 66. 34. 35 | 65. 0. 15 | 63. 25. 41 |
| 3 | | 55. 29. 16 | | | |
| 3 | | 85. 21. 29 | 83. 41. 31 | 82. 1. 11 | 80. 20. 28 |
| 4 | | 71. 51. 46 | 70. 9. 2 | 68. 25. 58 | 66. 42. 36 |
| 5 | Aldeba- | 58. 1. 11 | 56. 16. 3 | 54. 30. 41 | 52. 45. 4 |
| 6 | ran. | 43. 53. 42 | 42. 6. 52 | 40. 19. 55 | 38. 32. 50 |
| 7 | | 29. 36. 4 | 27. 48. 35 | 26. 1. 16 | 24. 14. 5 |
| 8 | | 15. 22. 14 | | | |
| 8 | | 59. 14. 20 | 57. 25. 46 | 55. 37. 13 | 53. 48. 43 |
| 9 | Pollux. | 44. 47. 6 | 42. 59. 2 | 41. 11. 7 | 39. 23. 20 |
| 10 | | 30. 27. 5 | | | |
| 10 | | 66. 19. 12 | 64. 31. 42 | 62. 44. 22 | 60. 57. 11 |
| 11 | Regulus. | 52. 3. 47 | 50. 17. 39 | 48. 31. 43 | 46. 45. 59 |
| 12 | | 38. 0. 34 | 36. 16. 11 | 34. 32. 3 | 32. 48. 11 |
| 10 | | 117. 19. 8 | 115. 39. 10 | 113. 59. 19 | 112. 19. 37 |
| 11 | | 104. 3. 17 | 102. 24. 29 | 100. 45. 52 | 99. 7. 24 |
| 12 | | 90. 57. 48 | 89. 20. 25 | 87. 43. 14 | 86. 6. 14 |
| 13 | The Sun. | 78. 4. 14 | 76. 38. 24 | 74. 52. 46 | 73. 17. 20 |
| 14 | | 65. 23. 15 | 63. 49. 2 | 62. 15. 0 | 60. 41. 11 |
| 15 | | 52. 55. 11 | 51. 22. 36 | 49. 50. 13 | 48. 18. 3 |
| 16 | | 40. 40. 32 | | | |
| 21 | | 72. 40. 39 | 71. 25. 0 | 70. 9. 44 | 68. 54. 54 |
| 22 | α Aquilæ. | 62. 47. 46 | 61. 35. 52 | 60. 24. 35 | 59. 13. 56 |
| 23 | | 53. 30. 58 | | | |
| 23 | | 80. 51. 28 | 79. 25. 58 | 78. 0. 35 | 76. 35. 17 |
| 24 | Fomal- | 69. 30. 26 | 68. 5. 51 | 66. 41. 23 | 65. 17. 3 |
| 25 | haut. | 58. 17. 11 | 56. 53. 35 | 55. 30. 8 | 54. 6. 50 |
| 26 | | 47. 12. 50 | | | |
| 26 | | 66. 28. 43 | 65. 9. 26 | 63. 50. 16 | 62. 31. 14 |
| 27 | α Pegaſi. | 55. 58. 47 | 54. 40. 57 | 53. 23. 26 | 52. 6. 14 |
| 28 | | 45. 46. 7 | | | |
| 28 | | 85. 0. 31 | 83. 31. 12 | 82. 1. 40 | 80. 31. 52 |
| 29 | α Arietis. | 72. 59. 7 | 71. 27. 46 | 69. 56. 9 | 68. 24. 16 |
| 30 | | 60. 40. 46 | | | |
| 30 | Aldeba- | 90. 41. 27 | 89. 4 29 | 87. 27. 7 | 85. 49. 22 |
| 31 | ran. | 77. 34. 36 | 75. 54. 25 | 74. 13. 48 | 72. 32. 46 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Antares. | 61. 49. 11 | 63. 22. 3 | 64. 55. 12 | 66. 28. 39 |
| 2 | | 74. 20. 39 | 75. 56. 6 | 77. 31. 53 | 79. 8. 2 |
| 3 | | 87. 13. 51 | 88. 52. 6 | 90. 30. 43 | 92. 9. 41 |
| 4 | | 100. 29. 51 | | | |
| 4 | α Aquilæ. | 58. 11. 14 | 59. 30. 57 | 60. 51. 31 | 62. 13. 0 |
| 5 | | 69. 12. 20 | 70. 38. 20 | 72. 4. 53 | 73. 32. 1 |
| 6 | | 80. 55. 0 | 82. 24. 50 | 83. 54. 56 | 85. 25. 19 |
| 7 | Fomal-haut. | 59. 46. 18 | 61. 28. 34 | 63. 11. 8 | 64. 54. 1 |
| 8 | | 73. 31. 50 | 75. 15. 57 | 77. 0. 9 | 78. 44. 27 |
| 9 | α Pegaſi. | 70. 25. 22 | 72. 3. 19 | 73. 41. 24 | 75. 19. 38 |
| 10 | | 83. 31. 56 | | | |
| 10 | α Arietis. | 39. 58. 40 | 41. 39. 40 | 43. 20. 57 | 45. 2. 32 |
| 11 | | 53. 33. 42 | 55. 16. 20 | 56. 58. 55 | 58. 41. 31 |
| 12 | Aldeba-ran. | 35. 43. 48 | 37. 28. 55 | 39. 13. 54 | 40. 58. 46 |
| 13 | | 49. 40. 53 | 51. 24. 48 | 53. 8. 33 | 54. 52. 7 |
| 14 | | 63. 27. 19 | 65. 9. 48 | 66. 52. 5 | 68. 34. 12 |
| 15 | | 77. 1. 56 | 78. 42. 54 | 80. 23. 41 | 82. 4. 17 |
| 16 | | 90. 24. 23 | | | |
| 16 | Pollux. | 46. 15. 16 | 47. 54. 25 | 49. 33. 25 | 51. 12. 15 |
| 17 | | 59. 23. 57 | 61. 1. 45 | 62. 39. 22 | 64. 16. 48 |
| 18 | | 72. 21. 13 | | | |
| 24 | The Sun. | 45. 39. 30 | 47. 0. 32 | 48. 21. 32 | 49. 42. 30 |
| 25 | | 56. 26. 40 | 57. 47. 28 | 59. 8. 16 | 60. 29. 5 |
| 26 | | 67. 13. 36 | 68. 34. 39 | 69. 55. 46 | 71. 16. 59 |
| 27 | | 78. 4. 30 | 79. 26. 23 | 80. 48. 25 | 82. 10. 37 |
| 28 | | 89. 4. 10 | 90. 27. 29 | 91. 51. 3 | 93. 14. 50 |
| 29 | | 100. 17. 31 | 101. 42. 54 | 103. 8. 35 | 104. 34. 35 |
| 30 | | 111. 49. 24 | 113. 17. 24 | 114. 45. 47 | 116. 14. 31 |
| 31 | | 123. 43. 57 | | | |
| 28 | Antares. | 57. 26. 3 | 58. 56. 25 | 60. 27. 1 | 61. 57. 52 |
| 29 | | 69. 36. 5 | 71. 8. 36 | 72. 41. 26 | 74. 14. 35 |
| 30 | | 82. 5. 19 | 83. 40. 31 | 85. 16. 5 | 86. 52. 2 |
| 31 | | 94. 57. 34 | 96. 35. 52 | 98. 14. 33 | 99. 53. 39 |
| N. 1 | | 108. 15. 20 | | | |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | 12 Hours. D. M. S. | 15 Hours. D. M. S. | 18 Hours. D. M. S. | 21 Hours. D. M. S. |
|---|---|---|---|---|---|
| 1 | Antares. | 68. 2. 24 | 69. 36. 28 | 71. 10. 51 | 72. 45. 35 |
| 2 | | 80. 44. 31 | 82. 21. 19 | 83. 58. 29 | 85. 35. 59 |
| 3 | | 93. 49. 1 | 95. 28. 42 | 97. 8. 44 | 98. 49. 7 |
| 4 | α Aquilæ. | 63. 35. 21 | 64. 58. 31 | 66. 22. 23 | 67. 47. 0 |
| 5 | | 74. 59. 42 | 76. 27. 53 | 77. 56. 30 | 79. 25. 32 |
| 6 | | 86. 56. 2 | | | |
| 6 | Fomalhaut. | 53. 1. 18 | 54. 41. 55 | 56. 22. 56 | 58. 4. 23 |
| 7 | | 66. 37. 11 | 68. 20. 34 | 70. 4. 7 | 71. 47. 53 |
| 8 | | 80. 28. 54 | | | |
| 8 | α Pegaſi. | 63. 56. 5 | 65. 33. 1 | 67. 10. 11 | 68. 47. 38 |
| 9 | | 76. 58. 0 | 78. 36. 28 | 80. 14. 56 | 81. 53. 25 |
| 10 | α Arietis. | 46. 44. 25 | 48. 26. 31 | 50. 8. 46 | 51. 51. 10 |
| 11 | | 60. 24. 9 | | | |
| 11 | Aldebaran. | 28. 42. 18 | 30. 27. 49 | 32. 13. 14 | 33. 58. 34 |
| 12 | | 42. 43. 30 | 44. 28. 5 | 46. 12. 30 | 47. 56. 46 |
| 13 | | 56. 35. 31 | 58. 18. 44 | 60. 1. 47 | 61. 44. 38 |
| 14 | | 70. 16. 7 | 71. 57. 51 | 73. 39. 24 | 75. 20. 45 |
| 15 | | 83. 44. 41 | 85. 24. 53 | 87. 4. 54 | 88. 44. 44 |
| 16 | Pollux. | 52. 50. 56 | 54. 29. 27 | 56. 7. 47 | 57. 45. 57 |
| 17 | | 65. 54. 3 | 67. 31. 7 | 69. 8. 0 | 70. 44. 42 |
| 23 | The Sun. | 40. 14. 57 | 41. 36. 8 | 42. 57. 18 | 44. 18. 25 |
| 24 | | 51. 3. 25 | 52. 24. 15 | 53. 45. 5 | 55. 5. 53 |
| 25 | | 61. 49. 55 | 63. 10. 46 | 64. 31. 40 | 65. 52. 37 |
| 26 | | 72. 38. 16 | 73. 59. 39 | 75. 21. 9 | 76. 42. 46 |
| 27 | | 83. 32. 58 | 84. 55. 29 | 86. 18. 11 | 87. 41. 5 |
| 28 | | 94. 38. 52 | 96. 3. 8 | 97. 27. 39 | 98. 52. 27 |
| 29 | | 106. 0. 54 | 107. 27. 31 | 108. 54. 28 | 110. 21. 46 |
| 30 | | 117. 43. 38 | 119. 13. 8 | 120. 43. 0 | 122. 13. 17 |
| 28 | Antares. | 63. 28. 58 | 65. 0. 19 | 66. 31. 57 | 68. 3. 53 |
| 29 | | 75. 48. 3 | 77. 21. 51 | 78. 55. 59 | 80. 30. 29 |
| 30 | | 88. 28. 21 | 90. 5. 4 | 91. 42. 10 | 93. 19. 40 |
| 31 | | 101. 33. 9 | 103. 13. 4 | 104. 53. 24 | 106. 34. 10 |

## Configurations of the SATELLITES of JUPITER at 5 o' th' Clock in the Morning.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. |
|---|---|---|
| 1 | *Su.* | 20*th S. aft. Tr. All Saints.* |
| 2 | M. | *Pr. Edward born.* |
| 3 | Tu. | On morrow of All Souls, |
| 4 | W. | [1 ret. |
| 5 | Th. | *Powder-Plot,* 1605. |
| 6 | F. | Michael. Term begins. |
| 7 | Sa. | *D. of Cumberland born.* |
| 8 | *Su.* | *21st Sunday after Trinity.* |
| 9 | M. | [*Prs. Aug. Sophia born.* |
| 10 | Tu. | |
| 11 | W. | St. Martin. |
| 12 | Th. | On mor. of St. Mar. 2 ret. |
| 13 | F. | Britius. |
| 14 | Sa. | |
| 15 | *Su.* | *22d Sunday after Trinity.* |
| 16 | M. | [Machutus. |
| 17 | Tu. | Hugh Bp. of Lincoln. |
| 18 | W. | In 8 days of St. Martin. |
| 19 | Th. | [3 ret. |
| 20 | F. | Edmund K. and Mart. |
| 21 | Sa. | |
| 22 | *Su.* | *23d Sun. Trin.* Cecilia. |
| 23 | M. | St. Clement. |
| 24 | Tu. | |
| 25 | W. | *D. of Gl. born.* In 15 days |
| 26 | Th. | [of St. Mar. 4 ret. |
| 27 | F. | |
| 28 | Sa. | Mich T. ends |
| 29 | *Su.* | *Adv. Su.* ~~Mich T. ends.~~ |
| 30 | M. | *St. Andrew.* |

## Phases of the Moon.

| | D. | H. | M. |
|---|---|---|---|
| Full Moon | 4. | 6. | 46 |
| Last Quarter | 10. | 22. | 26 |
| New Moon | 18. | 14. | 46 |
| First Quarter | 26. | 19. | 52 |

D. Other Phenomena.

3. ☾ 1 ad ♋ Ceti 12h. 2′.
☾ ♋ ♈ 5h. 25′.
5. ☾ ☉ ♉ 19h. 40′.
6. ☾ ☿ ♉ Im. 8h. 10′½. * 16′½ N. of ☽'s cent. Em. 8h. 25′. * 14′½ N. of ☽'s center.
7. ☾ H ♊ 7h. 59′.
☾ ♃ ♊ 22h. 42′.
8. ☾ ♂ ♊ 21h. 27′.
9. ☾ ♈ ♋ 20h. 46′.
11. ☾ ☽ ♌ 8h. 19′½.
12. ☾ ☿ ♌ 19h. 37′.
16. ☾ ♂ ♍ 12h. 19′.
17. ☾ ♄ ♎ 22h. 50′.
18. ☾ ♋ ♎ 4h. 48′.
☾ ♃ ♍ 21h. 6′.
19. ☾ ♈ ♍ 0h. 1′.
21. ☾ ♐ ♑ 16h. 16′.
25. ☾ ♃ ♓ 8h. 47′.

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | *Su.* | 7. 9. 11. 11 | 14.27. 9,0 | 14. 34. 26 | 16. 12,4 | 0,5 |
| 2 | M. | 7. 10. 11. 21 | 14.31. 5,0 | 14. 53. 30 | 16. 12,9 | 0,2 |
| 3 | Tu. | 7. 11. 11. 32 | 14.35. 1,8 | 15. 12. 19 | 16. 12,7 | 1,0 |
| 4 | W. | 7. 12. 11. 44 | 14.38.59,3 | 15. 30. 53 | 16. 11,7 | 1,8 |
| 5 | Th. | 7. 13. 11. 58 | 14.42.57,7 | 15. 49. 11 | 16. 9,9 | 2,7 |
| 6 | F. | 7. 14. 12. 14 | 14.46.56,9 | 16. 7. 14 | 16. 7,2 | 3,6 |
| 7 | Sa. | 7. 15. 12. 33 | 14.50.57,1 | 16. 25. 2 | 16. 3,6 | 4,4 |
| 8 | *Su.* | 7. 16. 12. 54 | 14.54.58,1 | 16. 42. 32 | 15. 59,2 | 5,3 |
| 9 | M. | 7. 17. 13. 16 | 14.59. 0,0 | 16. 59. 45 | 15. 53,9 | 6,2 |
| 10 | Tu. | 7. 18. 13. 40 | 15. 3. 2,6 | 17. 16. 41 | 15. 47,7 | 7,0 |
| 11 | W. | 7. 19. 14. 6 | 15. 7. 6,2 | 17. 33. 19 | 15. 40,7 | 7,8 |
| 12 | Th. | 7. 20. 14. 34 | 15.11.10,6 | 17. 49. 39 | 15. 32,9 | 8,7 |
| 13 | F. | 7. 21. 15. 4 | 15.15.15,9 | 18. 5. 41 | 15. 24,2 | 9,6 |
| 14 | Sa. | 7. 22. 15. 36 | 15.19.22,1 | 18. 21. 24 | 15. 14,6 | 10,5 |
| 15 | *Su.* | 7. 23. 16. 10 | 15.23.29,2 | 18. 36. 47 | 15. 4,1 | 11,4 |
| 16 | M. | 7. 24. 16. 46 | 15.27.37,1 | 18. 51. 50 | 14. 52,7 | 12,2 |
| 17 | Tu. | 7. 25. 17. 24 | 15.31.45,9 | 19. 6. 34 | 14. 40,5 | 13,0 |
| 18 | W. | 7. 26. 18. 3 | 15.35.55,5 | 19. 20. 57 | 14. 27,5 | 13,8 |
| 19 | Th. | 7. 27. 18. 44 | 15.40. 6,0 | 19. 34. 59 | 14. 13,7 | 14,7 |
| 20 | F. | 7. 28. 19. 26 | 15.44.17,3 | 19. 48. 39 | 13. 59,0 | 15,5 |
| 21 | Sa. | 7. 29. 20. 9 | 15.48.29,3 | 20. 1. 58 | 13. 43,5 | 16,3 |
| 22 | *Su.* | 8. 0. 20. 54 | 15.52.42,2 | 20. 14. 55 | 13. 27,2 | 17,0 |
| 23 | M. | 8. 1. 21. 40 | 15.56.55,8 | 20. 27. 29 | 13. 10,2 | 17,7 |
| 24 | Tu. | 8. 2. 22. 27 | 16. 1.10,2 | 20. 39. 40 | 12. 52,5 | 18,5 |
| 25 | W. | 8. 3. 23. 15 | 16. 5.25,4 | 20. 51. 28 | 12. 34,0 | 19,3 |
| 26 | Th. | 8. 4. 24. 4 | 16. 9.41,2 | 21. 2. 53 | 12. 14,7 | 20,0 |
| 27 | F. | 8. 5. 24. 54 | 16.13.57,8 | 21. 13. 54 | 11. 54,7 | 20,7 |
| 28 | Sa. | 8. 6. 25. 45 | 16.18.15,1 | 21. 24. 31 | 11. 34,0 | 21,4 |
| 29 | *Su.* | 8. 7. 26. 37 | 16.22.33,1 | 21. 34. 43 | 11. 12,6 | 22,0 |
| 30 | M. | 8. 8. 27. 29 | 16.26.51,6 | 21. 44. 31 | 10. 50,8 | 22,7 |

| Days. | Semidiameter of the Sun. | Time of D° passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 11,1 | 1. 6,9 | 2. 30,4 | 9. 996232 | 2. 22. 36 |
| 7 | 16. 12,6 | 1. 7,6 | 2. 30,8 | 9. 995594 | 2. 22. 17 |
| 13 | 16. 13,9 | 1. 8,3 | 2. 31,3 | 9. 995023 | 2. 21. 58 |
| 19 | 16. 15,1 | 1. 9,0 | 2. 31,7 | 9. 994497 | 2. 21. 39 |
| 25 | 16. 16,2 | 1. 9,6 | 2. 32,0 | 9. 994006 | 2. 21. 20 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Immersions. | | II. Satellite. Immersions. | | III. Satellite. | | |
|---|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. | |
| 1 | 21. 21. 59 | 4 | 8. 56. 7 | 3 | 23. 48. 29 | I. |
| 3 | 15*50. 26 | 7 | 22. 12. 54 | 4 | 3. 0. 59 | E. |
| 5 | 10. 18. 46 | 11 | 11. 29. 29 | 11 | 3. 46. 0 | I. |
| 7 | 4. 47. 3 | 15 | 0. 45. 44 | 11 | 6. 57. 44 | E. |
| 8 | 23. 15. 19 | 18 | 14* 1. 51 | 18 | 7. 42. 42 | I. |
| 10 | 17*43. 33 | 22 | 3. 17. 40 | 18 | 10. 53. 40 | E. |
| 12 | 12. 11. 41 | 25 | 16*33. 18 | 25 | 11. 38. 45 | I. |
| 14 | 6. 39. 51 | 29 | 5. 48. 41 | 25 | 14*48. 51 | E. |
| 16 | 1. 7. 56 | | | IV. Satellite. | | |
| 17 | 19. 35. 58 | | | | | |
| 19 | 14* 3. 56 | | | 9 | 3. 58. 28 | I. |
| 21 | 8. 31. 53 | | | 9 | 7. 59. 28 | E. |
| 23 | 2. 59. 47 | | | 25 | 21. 51. 26 | I. |
| 24 | 21. 27. 38 | | | 26 | 1. 47. 52 | E. |
| 26 | 15*55. 29 | | | | | |
| 28 | 10. 23. 13 | | | | | |
| 30 | 4. 51. 0 | | | | | |

| Days | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Paſſage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** ☍ 19d. 17h½. | | | | | | |
| 1 | 5. 27. 51 | 5. 12 N | 6. 27. 53 | 1. 33 N | 9. 17 S | 23. 19 |
| 7 | 6. 19. 41 | 3. 6 | 7. 7. 40 | 0. 57 | 13. 11 | 23. 32 |
| 13 | 7. 8. 42 | 0. 53 N | 7. 17. 21 | 0. 16 N | 16. 46 | 23. 45 |
| 19 | 7. 26. 2 | 1. 15 S | 7. 26. 54 | 0. 26 S | 19. 55 | 0. 1 |
| 25 | 8. 12. 36 | 3. 9 | 8. 6. 20 | 1. 1 | 22. 24 | 0. 12 |
| **VENUS.** | | | | | | |
| 1 | 11. 29. 45 | 3. 16 S | 8. 26. 5 | 3. 46 S | 27. 10 S | 3. 15 |
| 7 | 0. 9. 18 | 3. 5 | 9. 1. 45 | 3. 49 | 27. 14 | 3. 16 |
| 13 | 0. 18. 52 | 2. 48 | 9. 7. 3 | 3. 45 | 27. 2 | 3. 16 |
| 19 | 0. 28. 27 | 2. 27 | 9. 11. 56 | 3. 34 | 26. 28 | 3. 12 |
| 25 | 1. 8. 3 | 2. 1 | 9. 16. 16 | 3. 13 | 25. 40 | 3. 7 |
| **MARS.** | | | | | | |
| 1 | 4. 23. 15 | 1. 51 N | 5. 20. 3 | 1. 26 N | 5. 16 N | 20. 57 |
| 7 | 4. 25. 53 | 1. 50 | 5. 23. 39 | 1. 27 | 3. 52 | 20. 46 |
| 13 | 4. 28. 30 | 1. 49 | 5. 27. 14 | 1. 29 | 2. 28 | 20. 35 |
| 19 | 5. 1. 8 | 1. 48 | 6. 0. 47 | 1. 30 | 1. 5 N | 20. 23 |
| 25 | 5. 3. 45 | 1. 47 | 6. 4. 18 | 1. 32 | 0. 18 S | 20. 11 |
| **JUPITER.** | | | | | | |
| 1 | 5. 12. 24 | 1. 11 N | 5. 20. 19 | 1. 4 N | 4. 49 N | 20. 56 |
| 7 | 5. 12. 51 | 1. 11 | 5. 21. 20 | 1. 5 | 4. 25 | 20. 36 |
| 13 | 5. 13. 19 | 1. 11 | 5. 22. 19 | 1. 6 | 4. 4 | 20. 16 |
| 19 | 5. 13. 46 | 1. 12 | 5. 23. 13 | 1. 8 | 3. 44 | 19. 54 |
| 25 | 5. 14. 14 | 1. 12 | 5. 24. 2 | 1. 9 | 3. 25 | 19. 32 |
| **SATURN.** ☌ 9d. 18h. | | | | | | |
| 1 | 7. 17. 42 | 2. 15 N | 7. 16. 56 | 2. 3 N | 14. 57 S | 0. 33 |
| 7 | 7. 17. 54 | 2. 15 | 7. 17. 39 | 2. 3 | 15. 9 | 0. 10 |
| 13 | 7. 18. 5 | 2. 14 | 7. 18. 22 | 2. 2 | 15. 22 | 23. 47 |
| 19 | 7. 18. 16 | 2. 14 | 7. 19. 5 | 2. 2 | 15. 35 | 23. 25 |
| 25 | 7. 18. 27 | 2. 14 | 7. 19. 47 | 2. 2 | 15. 48 | 23. 3 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitude at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D. M. S. |
| 1 | *Su.* | 11. 25. 29. 31 | 0. 2. 22. 27 | 5. 9. 17 S | 5. 4. 24 S |
| 2 | M. | 0. 9. 22. 2 | 0. 16. 27. 55 | 4. 54. 54 | 4. 40. 47 |
| 3 | Tu. | 0. 23. 39. 34 | 1. 0. 56. 20 | 4. 22. 1 | 3. 58. 47 |
| 4 | W. | 1. 8. 17. 22 | 1. 15. 41. 42 | 3. 31. 23 | 3. 0. 11 |
| 5 | Th. | 1. 23. 8. 20 | 2. 0. 36. 9 | 2. 25. 44 | 1. 48. 39 |
| 6 | F. | 2. 8. 4. 7 | 2. 15. 31. 12 | 1. 9. 38 S | 0. 29. 27 S |
| 7 | Sa. | 2. 22. 56. 30 | 3. 0. 19. 13 | 0. 11. 5 N | 0. 51. 16 N |
| 8 | *Su.* | 3. 7. 38. 39 | 3. 14. 54. 16 | 1. 30. 18 | 2. 7. 33 |
| 9 | M. | 3. 22. 5. 42 | 3. 29. 12. 37 | 2. 42. 26 | 3. 14. 25 |
| 10 | Tu. | 4. 6. 14. 52 | 4. 13. 12. 24 | 3. 43. 6 | 4. 8. 9 |
| 11 | W. | 4. 20. 5. 12 | 4. 26. 53. 18 | 4. 29. 19 | 4. 46. 25 |
| 12 | Th. | 5. 3. 36. 53 | 5. 10. 16. 3 | 4. 59. 20 | 5. 8. 6 |
| 13 | F. | 5. 16. 51. 0 | 5. 23. 21. 56 | 5. 12. 43 | 5. 13. 12 |
| 14 | Sa. | 5. 29. 49. 1 | 6. 6. 12. 30 | 5. 9. 42 | 5. 2. 23 |
| 15 | *Su.* | 6. 12. 32. 34 | 6. 18. 49. 25 | 4. 51. 23 | 4. 36. 59 |
| 16 | M. | 6. 25. 3. 13 | 7. 1. 14. 12 | 4. 19. 23 | 3. 58. 50 |
| 17 | Tu. | 7. 7. 22. 28 | 7. 13. 28. 16 | 3. 35. 39 | 3. 10. 9 |
| 18 | W. | 7. 19. 31. 41 | 7. 25. 33. 1 | 2. 42. 37 | 2. 13. 25 |
| 19 | Th. | 8. 1. 32. 22 | 8. 7. 30. 3 | 1. 42. 52 | 1. 11. 16 |
| 20 | F. | 8. 13. 26. 10 | 8. 19. 21. 2 | 0. 39. 1 N | 0. 6. 26 N |
| 21 | Sa. | 8. 25. 14. 59 | 9. 1. 8. 19 | 0. 26. 10 S | 0. 58. 27 S |
| 22 | *Su.* | 9. 7. 1. 21 | 9. 12. 54. 33 | 1. 30. 7 | 2. 0. 49 |
| 23 | M. | 9. 18. 48. 23 | 9. 24. 43. 17 | 2. 30. 18 | 2. 58. 19 |
| 24 | Tu. | 10. 0. 39. 47 | 10. 6. 38. 26 | 3. 24. 30 | 3. 48. 39 |
| 25 | W. | 10. 12. 39. 46 | 10. 18. 44. 23 | 4. 10. 26 | 4. 29. 38 |
| 26 | Th. | 10. 24. 52. 52 | 11. 1. 5. 44 | 4. 45. 56 | 4. 59. 8 |
| 27 | F. | 11. 7. 23. 38 | 11. 13. 47. 2 | 5. 8. 54 | 5. 15. 3 |
| 28 | Sa. | 11. 20. 16. 24 | 11. 26. 52. 11 | 5. 17. 16 | 5. 15. 24 |
| 29 | *Su.* | 0. 3. 34. 42 | 0. 10. 24. 11 | 5. 9. 14 | 4. 58. 38 |
| 30 | M. | 0. 17. 20. 43 | 0. 24. 24. 12 | 4. 43. 29 | 4. 23. 38 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | *Su.* | 14 | 9. 43 | 357. 56 | 4. 12 | 6. 32 S | 3. 43 S |
| 2 | M. | 15 | 10. 32 | 10. 32 | 16. 58 | 0. 48 S | 2. 9 N |
| 3 | Tu. | 16 | 11. 22 | 23. 31 | 30. 12 | 5. 8 N | 8. 6 |
| 4 | W. | 17 | 12. 16 | 37. 4 | 44. 7 | 10. 57 | 13. 41 |
| 5 | Th. | 18 | 13. 13 | 51. 22 | 58. 49 | 16. 13 | 18. 32 |
| 6 | F. | 19 | 14. 14 | 66. 30 | 74. 20 | 20. 32 | 22. 11 |
| 7 | Sa. | 20 | 15. 17 | 82. 17 | 90. 21 | 23. 28 | 24. 19 |
| 8 | *Su.* | 21 | 16. 19 | 98. 25 | 106. 26 | 24. 45 | 24. 45 |
| 9 | M. | 22 | 17. 20 | 114. 21 | 122. 6 | 24. 20 | 23. 31 |
| 10 | Tu. | 23 | 18. 16 | 129. 38 | 136. 56 | 22. 20 | 20. 50 |
| 11 | W. | 24 | 19. 8 | 143. 59 | 150. 48 | 19. 3 | 17. 3 |
| 12 | Th. | 25 | 19. 57 | 157. 24 | 163. 47 | 14. 51 | 12. 29 |
| 13 | F. | 26 | 20. 42 | 169. 58 | 175. 59 | 10. 0 | 7. 26 |
| 14 | Sa. | 27 | 21. 26 | 181. 54 | 187. 43 | 4. 48 N | 2. 9 N |
| 15 | *Su.* | 28 | 22. 9 | 193. 27 | 199. 9 | 0. 29 S | 3. 6 S |
| 16 | M. | 29 | 22. 51 | 204. 50 | 210. 31 | 5. 40 | 8. 10 |
| 17 | Tu. | 30 | 23. 35 | 216. 13 | 221. 59 | 10. 35 | 12. 52 |
| 18 | W. | 1 | ♂ | 227. 50 | 233. 46 | 15. 1 | 17. 0 |
| 19 | Th. | 2 | 0. 19 | 239. 47 | 245. 54 | 18. 49 | 20. 25 |
| 20 | F. | 3 | 1. 6 | 252. 6 | 258. 25 | 21. 48 | 22. 56 |
| 21 | Sa. | 4 | 1. 54 | 264. 49 | 271. 15 | 23. 49 | 24. 26 |
| 22 | *Su.* | 5 | 2. 44 | 277. 44 | 284. 14 | 24. 47 | 24. 51 |
| 23 | M. | 6 | 3. 33 | 290. 45 | 297. 14 | 24. 38 | 24. 8 |
| 24 | Tu. | 7 | 4. 22 | 303. 41 | 310. 5 | 23. 22 | 22. 20 |
| 25 | W. | 8 | 5. 9 | 316. 24 | 322. 39 | 21. 2 | 19. 29 |
| 26 | Th. | 9 | 5. 57 | 328. 51 | 334. 59 | 17. 43 | 15. 45 |
| 27 | F. | 10 | 6. 43 | 341. 3 | 347. 7 | 13. 35 | 11. 14 |
| 28 | Sa. | 11 | 7. 28 | 353. 10 | 359. 14 | 8. 43 | 6. 4 |
| 29 | *Su.* | 12 | 8. 14 | 5. 10 | 11. 29 | 3. 18 S | 0. 27 S |
| 30 | M. | 13 | 9. 2 | 17. 47 | 24. 15 | 2. 28 N | 5. 23 N |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. Logar. at Noon. | Proport. Logar. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | *Su.* | 15. 51 | 15. 58 | 58. 9 | 58. 36 | 4907 | 4874 |
| 2 | M. | 16. 5 | 16. 13 | 59. 3 | 59. 29 | 4841 | 4809 |
| 3 | Tu. | 16. 19 | 16. 24 | 59. 52 | 60. 12 | 4781 | 4757 |
| 4 | W. | 16. 29 | 16. 32 | 60. 29 | 60. 42 | 4736 | 4721 |
| 5 | Th. | 16. 35 | 16. 36 | 60. 51 | 60. 56 | 4710 | 4704 |
| 6 | F. | 16. 36 | 16. 35 | 60. 57 | 60. 53 | 4703 | 4708 |
| 7 | Sa. | 16. 34 | 16. 31 | 60. 46 | 60. 35 | 4716 | 4729 |
| 8 | *Su.* | 16. 27 | 16. 22 | 60. 21 | 60. 5 | 4746 | 4765 |
| 9 | M. | 16. 17 | 16. 12 | 59. 47 | 59. 27 | 4787 | 4811 |
| 10 | Tu. | 16. 6 | 16. 1 | 59. 6 | 58. 45 | 4837 | 4863 |
| 11 | W. | 15. 55 | 15. 49 | 58. 24 | 58. 2 | 4889 | 4916 |
| 12 | Th. | 15. 43 | 15. 38 | 57. 41 | 57. 21 | 4942 | 4967 |
| 13 | F. | 15. 32 | 15. 27 | 57. 2 | 56. 43 | 4991 | 5015 |
| 14 | Sa. | 15. 22 | 15. 18 | 56. 25 | 56. 8 | 5038 | 5060 |
| 15 | *Su.* | 15. 14 | 15. 10 | 55. 53 | 55. 38 | 5080 | 5099 |
| 16 | M. | 15. 6 | 15. 3 | 55. 24 | 55. 12 | 5118 | 5133 |
| 17 | Tu. | 14. 59 | 14. 57 | 55. 1 | 54. 51 | 5148 | 5161 |
| 18 | W. | 14. 54 | 14. 52 | 54. 41 | 54. 32 | 5174 | 5186 |
| 19 | Th. | 14. 49 | 14. 48 | 54. 24 | 54. 19 | 5197 | 5203 |
| 20 | F. | 14. 47 | 14. 46 | 54. 14 | 54. 10 | 5210 | 5215 |
| 21 | Sa. | 14. 45 | 14. 45 | 54. 8 | 54. 7 | 5218 | 5219 |
| 22 | *Su.* | 14. 45 | 14. 46 | 54. 9 | 54. 11 | 5217 | 5214 |
| 23 | M. | 14. 47 | 14. 49 | 54. 16 | 54. 23 | 5207 | 5198 |
| 24 | Tu. | 14. 52 | 14. 55 | 54. 32 | 54. 43 | 5186 | 5171 |
| 25 | W. | 14. 58 | 15. 3 | 54. 57 | 55. 12 | 5153 | 5133 |
| 26 | Th. | 15. 7 | 15. 13 | 55. 30 | 55. 51 | 5110 | 5082 |
| 27 | F. | 15. 19 | 15. 26 | 56. 13 | 56. 38 | 5054 | 5022 |
| 28 | Sa. | 15. 33 | 15. 41 | 57. 4 | 57. 32 | 4989 | 4953 |
| 29 | *Su.* | 15. 49 | 15. 57 | 58. 1 | 58. 31 | 4917 | 4880 |
| 30 | M. | 16. 5 | 16. 13 | 59. 0 | 59. 29 | 4844 | 4809 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Aldebaran. | 70. 51. 19 | 69. 9. 28 | 67. 27. 10 | 65. 44. 25 |
| 2 | | 57. 4. 38 | 55. 19. 28 | 53. 33. 56 | 51. 48. 2 |
| 3 | | 42. 53. 13 | 41. 5. 16 | 39. 17. 5 | 37. 28. 37 |
| 4 | | 28. 23. 13 | 26. 33. 41 | 24. 44. 8 | 22. 54. 44 |
| 5 | | 13. 52. 2 | | | |
| 5 | Pollux. | 57. 38. 49 | 55. 47. 8 | 53. 55. 20 | 52. 3. 28 |
| 6 | | 42. 44. 15 | 40. 52. 33 | 39. 0. 58 | 37. 9. 33 |
| 7 | Regulus. | 63. 48. 33 | 61. 57. 33 | 60. 6. 44 | 58. 16. 8 |
| 8 | | 49. 6. 36 | 47. 17. 29 | 45. 28. 42 | 43. 40. 18 |
| 9 | | 34. 42. 48 | | | |
| 9 | Spica ♍ | 88. 45. 5 | 86. 58. 24 | 85. 12. 3 | 83. 26. 3 |
| 10 | | 74. 40. 50 | 72. 56. 47 | 71. 13. 3 | 69. 29. 39 |
| 11 | | 60. 57. 45 | | | |
| 9 | The Sun. | 115. 5. 46 | 113. 26. 7 | 111. 46. 47 | 110. 7. 45 |
| 10 | | 101. 57. 16 | 100. 20. 7 | 98. 43. 18 | 97. 6. 47 |
| 11 | | 89. 9. 3 | 87. 34. 27 | 86. 0. 10 | 84. 26. 12 |
| 12 | | 76. 40. 47 | 75. 8. 35 | 73. 36. 39 | 72. 5. 1 |
| 13 | | 64. 30. 53 | 63. 0. 50 | 61. 31. 2 | 60. 1. 29 |
| 14 | | 52. 37. 19 | 51. 9. 10 | 49. 41. 14 | 48. 13. 30 |
| 15 | | 40. 57. 54 | | | |
| 21 | Fomalhaut. | 67. 3. 44 | 65. 39. 10 | 64. 14. 44 | 62. 50. 27 |
| 22 | | 55. 51. 15 | 54. 27. 54 | 53. 4. 44 | 51. 41. 47 |
| 23 | | 44. 50. 26 | 43. 29. 1 | 42. 7. 56 | 40. 47. 12 |
| 24 | α Pegaſi. | 53. 56. 15 | 52. 39. 50 | 51. 23. 51 | 50. 8. 18 |
| 25 | | 43. 58. 25 | 42. 46. 28 | 41. 35. 19 | 40. 25. 4 |
| 26 | α Arietis. | 70. 57. 18 | 69. 27. 46 | 67. 58. 2 | 66. 28. 7 |
| 27 | | 58. 55. 23 | | | |
| 27 | Aldebaran. | 88. 49. 18 | 87. 14. 40 | 85. 39. 40 | 84. 4. 18 |
| 28 | | 76. 1. 49 | 74. 24. 11 | 72. 46. 8 | 71. 7. 42 |
| 29 | | 62. 49. 15 | 61. 8. 16 | 59. 26. 51 | 57. 45. 0 |
| 30 | | 49. 9. 10 | 47. 24. 41 | 45. 39. 48 | 43. 54. 30 |
| D. 1 | | 35. 2. 3 | | | |

Distances of ☽'s Center from ☉, and from Stars east of her.

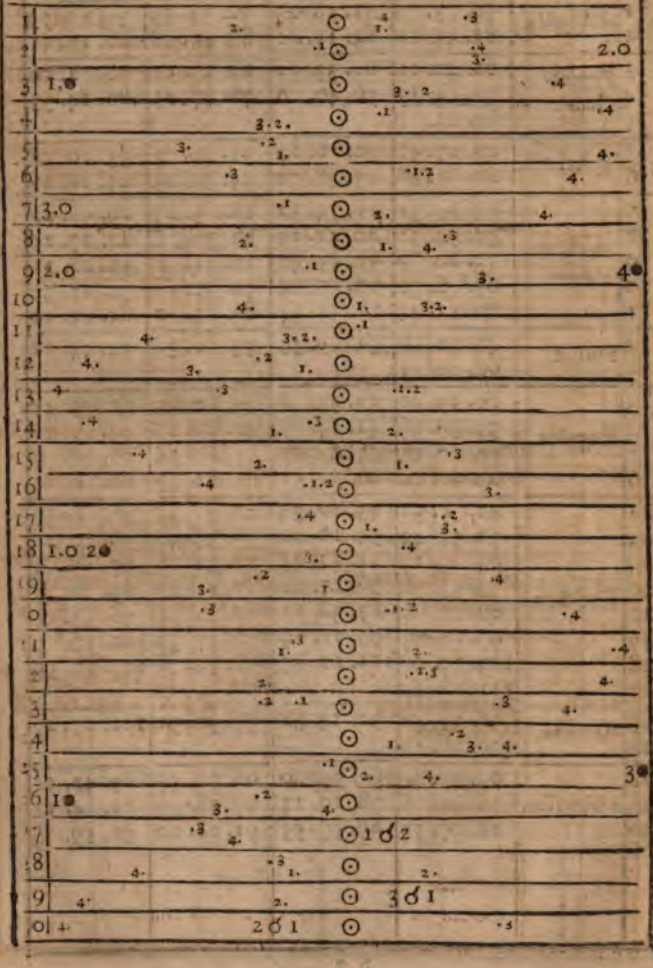
| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Aldebaran. | 64. 1. 16 | 62. 17. 43 | 60. 33. 45 | 58. 49. 24 |
| 2 | | 50. 1. 45 | 48. 15. 7 | 46. 28. 8 | 44. 40. 50 |
| 3 | | 35. 39. 55 | 33. 50. 58 | 32. 1. 51 | 30. 12. 36 |
| 4 | | 21. 5. 27 | 19. 16. 29 | 17. 27. 52 | 15. 39. 41 |
| 5 | Pollux. | 50. 11. 33 | 48. 19. 40 | 46. 27. 49 | 44. 36. 1 |
| 6 | | 35. 18. 21 | | | |
| 6 | Regulus. | 71. 14. 13 | 69. 22. 36 | 67. 31. 7 | 65. 39. 45 |
| 7 | | 56. 25. 43 | 54. 35. 33 | 52. 45. 39 | 50. 56. 0 |
| 8 | | 41. 52. 3 | 40. 4. 13 | 38. 16. 43 | 36. 29. 35 |
| 9 | Spica ♍ | 81. 40. 22 | 79. 54. 59 | 78. 9. 56 | 76. 25. 14 |
| 10 | | 67. 46. 35 | 66. 3. 51 | 64. 21. 29 | 62. 39. 27 |
| 8 | The Sun. | 121. 47. 21 | 120. 6. 31 | 118. 25. 58 | 116. 45. 43 |
| 9 | | 108. 29. 1 | 106. 50. 37 | 105. 12. 31 | 103. 34. 44 |
| 10 | | 95. 30. 36 | 93. 54. 44 | 92. 19. 12 | 90. 43. 58 |
| 11 | | 82. 52. 32 | 81. 19. 9 | 79. 46. 4 | 78. 13. 16 |
| 12 | | 70. 33. 39 | 69. 2. 34 | 67. 31. 44 | 66. 1. 11 |
| 13 | | 58. 32. 11 | 57. 3. 7 | 55. 34. 17 | 54. 5. 41 |
| 14 | | 46. 45. 59 | 45. 18. 40 | 43. 51. 33 | 42. 24. 37 |
| 20 | Fomalhaut. | 72. 43. 14 | 71. 18. 11 | 69. 53. 15 | 68. 28. 26 |
| 21 | | 61. 26. 18 | 60. 2. 18 | 58. 38. 27 | 57. 14. 46 |
| 22 | | 50. 19. 2 | 48. 56. 29 | 47. 34. 12 | 46. 12. 11 |
| 23 | | 39. 26. 51 | | | |
| 23 | α Pegasi. | 59. 5. 4 | 57. 47. 28 | 56. 30. 6 | 55. 13. 1 |
| 24 | | 48. 53. 12 | 47. 38. 35 | 46. 24. 32 | 45. 11. 7 |
| 25 | | 39. 15. 47 | | | |
| 25 | α Arietis. | 76. 53. 31 | 75. 24. 45 | 73. 55. 47 | 72. 26. 38 |
| 26 | | 64. 57. 59 | 63. 27. 38 | 61. 57. 5 | 60. 26. 20 |
| 27 | Aldebaran. | 82. 28. 34 | 80. 52. 27 | 79. 15. 57 | 77. 39. 5 |
| 28 | | 69. 28. 51 | 67. 49. 35 | 66. 9. 54 | 64. 29. 47 |
| 29 | | 56. 2. 42 | 54. 19. 58 | 52. 36. 48 | 50. 53. 12 |
| 30 | | 42. 8. 47 | 40. 22. 40 | 38. 36. 11 | 36. 49. 18 |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 64. 28. 15 | 65. 50. 47 | 67. 14. 7 | 68. 38. 15 |
| 2 | α Aquilæ | 75. 49. 27 | 77. 17. 36 | 78. 46. 17 | 80. 15. 29 |
| 3 | | 87. 48. 18 | | | |
| 3 | | 53. 57. 50 | 55. 39. 51 | 57. 22. 27 | 59. 5. 35 |
| 4 | Fomal-haut. | 67. 48. 20 | 69. 34. 6 | 71. 20. 10 | 73. 6. 32 |
| 5 | | 82. 2. 3 | 83. 49. 40 | 85. 37. 24 | 87. 25. 13 |
| 6 | | 35. 8. 48 | 36. 51. 31 | 38. 34. 59 | 40. 19. 6 |
| 7 | α Arietis. | 49. 5. 26 | | | |
| 7 | | 17. 10. 47 | 18. 59. 13 | 20. 47. 51 | 22. 36. 38 |
| 8 | | 31. 41. 10 | 33. 29. 48 | 35. 18. 15 | 37. 6. 32 |
| 9 | Aldeba-ran. | 46. 4. 33 | 47. 51. 22 | 49. 37. 54 | 51. 24. 9 |
| 10 | | 60. 10. 57 | 61. 55. 24 | 63. 39. 32 | 65. 23. 21 |
| 11 | | 73. 57. 48 | 75. 39. 45 | 77. 21. 24 | 79. 2. 44 |
| 12 | | 87. 25. 2 | | | |
| 12 | Pollux. | 43. 14. 30 | 44. 53. 49 | 46. 32. 53 | 48. 11. 42 |
| 13 | | 56. 22. 3 | 57. 59. 23 | 59. 36. 30 | 61. 13. 22 |
| 14 | | 33. 20. 48 | 34. 55. 46 | 36. 30. 34 | 38. 5. 15 |
| 15 | Regulus. | 45. 56. 14 | 47. 29. 57 | 49. 3. 31 | 50. 36. 56 |
| 16 | | 58. 21. 42 | 59. 54. 13 | 61. 26. 35 | 62. 58. 49 |
| 17 | | 70. 37. 52 | | | |
| 22 | | 36. 42. 2 | 38. 2. 54 | 39. 23. 47 | 40. 44. 41 |
| 23 | | 47. 29. 43 | 48. 50. 52 | 50. 12. 5 | 51. 33. 22 |
| 24 | | 58. 21. 6 | 59. 42. 57 | 61. 4. 56 | 62. 27. 3 |
| 25 | The Sun. | 69. 19. 58 | 70. 43. 4 | 72. 6. 22 | 73. 29. 53 |
| 26 | | 80. 30. 47 | 81. 55. 42 | 83. 20. 54 | 84. 46. 23 |
| 27 | | 91. 58. 15 | 93. 25. 35 | 94. 53. 17 | 96. 21. 19 |
| 28 | | 103. 47. 4 | 105. 17. 22 | 106. 48. 5 | 108. 19. 13 |
| 29 | | 116. 1. 16 | 117. 35. 0 | 119. 9. 11 | 120. 43. 49 |
| 27 | Antares. | 90. 18. 54 | 91. 53. 20 | 93. 28. 7 | 95. 3. 16 |
| 28 | | 103. 4. 28 | 104. 41. 51 | 106. 19. 37 | 107. 57. 46 |
| 29 | | 71. 5. 49 | 72. 29. 25 | 73. 53. 40 | 75. 18. 33 |
| 30 | α Aquilæ. | 82. 31. 59 | 84. 0. 16 | 85. 29. 1 | 86. 58. 13 |
| D. 1 | | 94. 30. 17 | | | |

Distances of ☽'s Center from ☉, and from Stars west of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | α Aquilæ. | 70. 3. 7 | 71. 28. 43 | 72. 54. 59 | 74. 21. 53 |
| 2 | | 81. 45. 12 | 83. 15. 22 | 84. 45. 58 | 86. 16. 57 |
| 3 | Fomal-haut. | 60. 49. 14 | 62. 33. 22 | 64. 17. 57 | 66. 2. 56 |
| 4 | | 74. 53. 13 | 76. 40. 8 | 78. 27. 15 | 80. 14. 33 |
| 5 | | 89. 13. 5 | | | |
| 5 | α Arietis. | 28. 27. 52 | 30. 6. 23 | 31. 46. 7 | 33. 26. 58 |
| 6 | | 42. 3. 46 | 43. 48. 50 | 45. 34. 13 | 47. 19. 46 |
| 7 | Aldeba-ran. | 24. 25. 31 | 26. 14. 32 | 28. 3. 27 | 29. 52. 22 |
| 8 | | 38. 54. 38 | 40. 42. 29 | 42. 30. 5 | 44. 17. 25 |
| 9 | | 53. 10. 7 | 54. 55. 46 | 56. 41. 8 | 58. 26. 12 |
| 10 | | 67. 6. 52 | 68. 50. 4 | 70. 32. 57 | 72. 15. 32 |
| 11 | | 80. 43. 47 | 82. 24. 32 | 84. 5. 0 | 85. 45. 10 |
| 12 | Pollux. | 49. 50. 16 | 51 28. 35 | 53. 6. 39 | 54. 44. 28 |
| 13 | | 62. 50. 1 | | | |
| 13 | Regulus. | 26. 59. 40 | 28. 35. 8 | 30. 10. 29 | 31. 45. 42 |
| 14 | | 39. 39. 46 | 41. 14. 7 | 42. 48. 19 | 44. 22. 21 |
| 15 | | 52. 10. 11 | 53. 43. 17 | 55. 16. 14 | 56. 49. 2 |
| 16 | | 64. 30. 54 | 66. 2. 51 | 67. 34. 39 | 69. 6. 20 |
| 22 | The Sun. | 42. 5. 37 | 43. 26. 34 | 44. 47. 35 | 46. 8. 37 |
| 23 | | 52. 54. 44 | 54 16. 10 | 55. 37. 42 | 56. 59. 21 |
| 24 | | 63. 49. 19 | 65. 11. 43 | 66. 34. 18 | 67. 57. 3 |
| 25 | | 74. 53. 36 | 76. 17. 32 | 77. 41. 43 | 79. 6. 8 |
| 26 | | 86. 12. 8 | 87. 38. 11 | 89. 4. 34 | 90. 31. 15 |
| 27 | | 97. 49. 43 | 99. 18. 29 | 100. 47. 38 | 102. 17. 9 |
| 28 | | 109. 50. 45 | 111. 22. 43 | 112. 55. 8 | 114. 27. 59 |
| 29 | | 122. 18. 53 | | | |
| 27 | Antares. | 96. 38. 46 | 98. 14. 38 | 99. 50. 52 | 101. 27. 29 |
| 28 | | 109. 36. 20 | | | |
| 28 | α Aquilæ. | 65. 38. 40 | 66. 59. 20 | 68. 20. 45 | 69. 42. 55 |
| 29 | | 76. 44. 6 | 78. 19. 15 | 79. 36. 56 | 81. 4. 11 |
| 30 | | 88. 27. 52 | 89. 57. 55 | 91. 28. 20 | 92. 59. 9 |

Configurations of the SATELLITES of JUPITER at 6 o' Clock in the Morning.

| Days of the Month. | Days of the Week. | Sundays, Holidays, &c. | Phases of the Moon. |
|---|---|---|---|
| 1 | Tu. | | D. H. M. |
| 2 | W. | | Full Moon — 3. 17. 29 |
| 3 | Th. | | Laſt Quarter — 10. 9. 48 |
| 4 | F. | | New Moon — 18. 10. 4 |
| 5 | Sa. | | Firſt Quarter — 26. 11. 9 |
| 6 | *Su.* | *2d Su. in Adv.* Nicholas. | Other Phenomena. |
| 7 | M. | | D. |
| 8 | Tu | Concept. of V. Mary. | 3. ☾ ☌ ♉ 6h. 39′. |
| 9 | W. | | ☾ ☌ ♉ 19h. 49′. |
| 10 | Th. | | ☾ viſibly eclipſed. |
| 11 | F. | | 5. ☾ ☌ ♊ 8h. 23′. |
| 12 | Sa. | | 7. ☾ ☍ ♋ 4h. 56′. |
| 13 | *Su.* | *3d Su. in Adv.* Lucy. | 10. ☾ ☌ ♌ 1h. 34′. |
| 14 | M. | | 11. ☾ ☌ ♍ 6h. 26′. |
| 15 | Tu. | | 13. ☾ ✶ ♏ 17h. 52′. |
| 16 | W. | O Sap. Camb. Ter. ends. | 14. ♄ 4 ♑ ♎ diff. Lat. 13′. |
| 17 | Th. | Oxford Term ends. | ♂ ☌ ♏ diff. Lat. 10′. |
| 18 | F. | | 15. ☾ 4 ♑ ♎ 13h. 21′. |
| 19 | Sa. | | 16. ☾ ☍ ♏ 3h. 4′. |
| 20 | *Su.* | *4th Su. in Advent.* | ☾ ☌ ♏ 6h. 0′. |
| 21 | M. | *St. Thomas.* | 17. ☾ ☍ Ophiuchi 15h. 49′. |
| 22 | Tu. | | 18. ☉ eclipſed inviſible. |
| 23 | W. | | 21. ☉ enters ♑ at 4h. 5′. |
| 24 | Th. | | 22. ☾ ☌ ♋ 14h. 50′. |
| 25 | F. | *Chriſtmas-Day.* | 30. ☾ ☌ ♉ 17h. 45′. |
| 26 | Sa. | *St. Stephen.* | 31. ☾ ☍ ♉ Im. 6h. 0′½. * 8′½ N. Em. 6h. 58′. * 1′½ N. |
| 27 | *Su.* | *Su. after Chriſtm. St. John.* | |
| 28 | M. | *Innocents.* | |
| 29 | Tu. | | |
| 30 | W. | | |
| 31 | Th. | Silveſter. | |

| Days of the Month. | Days of the Week. | Sun's Longitude. | Sun's Right Asc. in Time. | Sun's Declin. South. | Equat. of Time. Sub. | Diff. |
|---|---|---|---|---|---|---|
| | | S. D. M. S. | H. M. S. | D. M. S. | M. S. | S. |
| 1 | Tu. | 8. 9. 28. 22 | 16.31.10,8 | 21. 53. 54 | 10. 28,1 | 23,1 |
| 2 | W. | 8. 10. 29. 16 | 16.35.30,7 | 22. 2. 52 | 10. 5,0 | 23,8 |
| 3 | Th. | 8. 11. 30. 11 | 16.39.51,1 | 22. 11. 23 | 9.41,1 | 24,4 |
| 4 | F. | 8. 12. 31. 7 | 16.44.12,1 | 22. 19. 29 | 9. 16,7 | 25,0 |
| 5 | Sa. | 8. 13. 32. 4 | 16 48.33,7 | 22. 27. 9 | 8. 51,7 | 25,4 |
| 6 | *Su.* | 8. 14. 33. 2 | 16.52.55,8 | 22. 34. 22 | 8. 26,3 | 26,0 |
| 7 | M. | 8. 15. 34. 2 | 16.57.18,5 | 22. 41. 9 | 8. 0,3 | 26,6 |
| 8 | Tu. | 8. 16. 35. 2 | 17. 1.41,6 | 22. 47. 29 | 7. 33,7 | 27,0 |
| 9 | W. | 8. 17. 36. 3 | 17. 6. 5,3 | 22. 53. 23 | 7. 6,7 | 27,4 |
| 10 | Th. | 8. 18. 37. 6 | 17.10.29,3 | 22. 58. 49 | 6. 39,3 | 27,8 |
| 11 | F. | 8. 19. 38. 9 | 17.14.53,8 | 23. 3. 48 | 6. 11,5 | 28,3 |
| 12 | Sa. | 8. 20. 39. 14 | 17.19.18,7 | 23. 8. 19 | 5. 43,2 | 28,6 |
| 13 | *Su.* | 8. 21. 40. 20 | 17.23.44,0 | 23. 12. 23 | 5. 14,6 | 29,0 |
| 14 | M. | 8. 22. 41. 27 | 17.28. 9,5 | 23. 16. 0 | 4. 45,6 | 29,2 |
| 15 | Tu. | 8. 23. 42. 34 | 17.32.35,4 | 23. 19. 7 | 4. 16,4 | 29,5 |
| 16 | W. | 8. 24. 43. 43 | 17.37. 1,5 | 23. 21. 48 | 3. 46,9 | 29,6 |
| 17 | Th. | 8. 25. 44. 52 | 17.41.27,8 | 23. 24. 0 | 3. 17,3 | 29,9 |
| 18 | F. | 8. 26. 46. 2 | 17.45.54,3 | 23. 25. 44 | 2. 47,4 | 30,0 |
| 19 | Sa. | 8. 27. 47. 12 | 17.50.21,0 | 23. 27. 0 | 2. 17,4 | 30,1 |
| 20 | *Su.* | 8. 28. 48. 23 | 17.54.47,7 | 23. 27. 47 | 1. 47,3 | 30,2 |
| 21 | M. | 8. 29. 49. 34 | 17.59.14,5 | 23. 28. 6 | 1. 17,1 | 30,1 |
| 22 | Tu. | 9. 0. 50. 45 | 18. 3.41,3 | 23. 27. 57 | 0. 47,0 | 30,2 |
| 23 | W. | 9. 1. 51. 57 | 18. 8. 8,1 | 23. 27. 19 | 0. 16,8 | 30,1 |
| 24 | Th. | 9. 2. 53. 8 | 18 12 34,8 | 23. 26. 14 | Ad: 13,3 | 30,0 |
| 25 | F. | 9. 3. 54. 19 | 18.17. 1,5 | 23. 24. 39 | 0. 43,3 | 29,8 |
| 26 | Sa. | 9. 4. 55. 30 | 18.21.28,0 | 23. 22. 36 | 1. 13,1 | 29,7 |
| 27 | *Su.* | 9. 5. 56. 40 | 18.25 54,3 | 23. 20. 6 | 1. 42,8 | 29,5 |
| 28 | M. | 9. 6. 57. 51 | 18 30.20,4 | 23. 17. 7 | 2. 12,3 | 29,3 |
| 29 | Tu. | 9. 7. 59. 1 | 18.34 46,3 | 23. 13. 40 | 2. 41,6 | 29,0 |
| 30 | W. | 9. 9. 0. 11 | 18.39.12,0 | 23. 9. 45 | 3. 10,6 | 28,7 |
| 31 | Th. | 9. 10. 1. 21 | 18.43.37,3 | 23. 5. 23 | 3. 39,3 | |

| Days. | Semidiameter of the Sun. | Time of D passing the Meridian. | Hourly Motion of the Sun. | Logarithm of the Sun's Distance. | Place of the Moon's Node. |
|---|---|---|---|---|---|
| | M. S. | M. S. | M. S. | | S. D. M. |
| 1 | 16. 17,1 | 1. 10,2 | 2. 32,2 | 9. 993573 | 2. 21. 1 |
| 7 | 16. 17,9 | 1. 10,7 | 2. 32,5 | 9. 993232 | 2. 20. 42 |
| 13 | 16. 18,5 | 1. 11,0 | 2. 32,7 | 9. 992982 | 2. 20. 23 |
| 19 | 16. 19,0 | 1. 11,1 | 2. 32,8 | 9. 992802 | 2. 20. 4 |
| 25 | 16. 19,2 | 1. 11,1 | 2. 32,9 | 9. 992677 | 2. 19. 45 |

## Eclipses of the SATELLITES of JUPITER.

| I. Satellite. Immersions. | | II. Satellite. Immersions. | | III. Satellite. | | |
|---|---|---|---|---|---|---|
| Days | H. M. S. | Days | H. M. S. | Days | H. M. S. | |
| 1 | 23. 18. 41 | 2 | 19* 4. 0 | 2 | 15*34. 2 | I |
| 3 | 17*46. 22 | 6 | 8. 19. 9 | 2 | 18*43. 9 | E |
| 5 | 12. 14. 0 | 9 | 21. 34. 4 | 9 | 19. 28. 48 | I |
| 7 | 6. 41. 38 | 13 | 10. 48. 52 | 9 | 22. 37. 7 | E |
| 9 | 1. 9. 10 | 17 | 0. 3. 46 | 16 | 23. 23. 14 | I |
| 10 | 19. 36. 48 | 20 | 13*18. 27 | 17 | 2. 30. 42 | E |
| 12 | 14* 4. 17 | 24 | 2. 33. 10 | 24 | 3. 17. 34 | I |
| 14 | 8. 31. 50 | 27 | 15*47. 43 | 24 | 6. 24. 16 | E |
| 16 | 2. 59. 17 | 31 | 5. 2. 27 | 31 | 7. 11. 56 | I |
| 17 | 21. 26. 53 | | | 31 | 10. 17. 44 | E |
| 19 | 15*54. 18 | | | | | |
| 21 | 10. 21. 48 | | | IV. Satellite. | | |
| 23 | 4. 49. 20 | | | | | |
| 24 | 23. 16. 50 | | | 12 | 15*41. 0 | I |
| 26 | 17*44. 22 | | | 12 | 19. 32. 36 | E |
| 28 | 12*11. 51 | | | 29 | 9. 29. 22 | I |
| 30 | 6. 39. 20 | | | 29 | 13*16. 3 | E |

| Days. | Heliocentric Longitude. | Heliocentric Latitude. | Geocentric Longitude. | Geocentric Latitude. | Declination. | Passage over Merid. |
|---|---|---|---|---|---|---|
| | S. D. M. | D. M. | S. D. M. | D. M. | D. M. | H. M. |
| **MERCURY.** | | | | | | |
| 1 | 8. 29. 11 | 4. 48 S | 8. 15. 43 | 1. 33 S | 24. 15 S | 0. 26 |
| 7 | 9. 16. 32 | 6. 6 | 8. 25. 6 | 1. 58 | 25. 21 | 0. 41 |
| 13 | 10. 5. 30 | 6. 52 | 9. 4. 27 | 2. 12 | 25. 36 | 0. 56 |
| 19 | 10. 27. 6 | 6. 51 | 9. 13. 40 | 2. 11 | 24. 57 | 1. 10 |
| 25 | 11. 22. 36 | 5. 37 | 9. 22. 20 | 1. 49 | 23. 24 | 1. 21 |
| **VENUS.** | | | | | | |
| 1 | 1. 17. 41 | 1. 32 S | 9. 19. 54 | 2. 41 S | 24. 39 S | 2. 56 |
| 7 | 1. 27. 19 | 1. 1 | 9. 22. 37 | 1. 57 | 23. 29 | 2. 41 |
| 13 | 2. 6. 58 | 0. 27 S | 9. 24. 12 | 0. 58 S | 22. 15 | 2. 21 |
| 19 | 2. 16. 39 | 0. 7 N | 9. 24. 27 | 0. 16 N | 20. 59 | 1. 55 |
| 25 | 2. 26. 20 | 0. 41 | 9. 23. 14 | 1. 44 | 19. 46 | 1. 22 |
| **MARS.** | | | | | | |
| 1 | 5. 6. 22 | 1. 45 N | 6. 7. 47 | 1. 33 N | 1. 40 S | 19. 58 |
| 7 | 5. 9. 0 | 1. 44 | 6. 11. 14 | 1. 34 | 3. 0 | 19. 45 |
| 13 | 5. 11. 37 | 1. 42 | 6. 14. 39 | 1. 35 | 4. 19 | 19. 31 |
| 19 | 5. 14. 15 | 1. 40 | 6. 18. 1 | 1. 36 | 5. 35 | 19. 17 |
| 25 | 5. 16. 54 | 1. 37 | 6. 21. 20 | 1. 37 | 6. 50 | 19. 2 |
| **JUPITER.** □ $17^d. 15^h\frac{1}{2}$. | | | | | | |
| 1 | 5. 14. 41 | 1. 12 N | 5. 24. 47 | 1. 10 N | 3. 9 N | 19. 9 |
| 7 | 5. 15. 9 | 1. 13 | 5. 25. 27 | 1. 12 | 2. 54 | 18. 45 |
| 13 | 5. 15. 36 | 1. 13 | 5. 26. 1 | 1. 13 | 2. 42 | 18. 20 |
| 19 | 5. 16. 4 | 1. 13 | 5. 26. 30 | 1. 15 | 2. 32 | 17. 56 |
| 25 | 5. 16. 31 | 1. 13 | 5. 26. 53 | 1. 16 | 2. 24 | 17. 30 |
| **SATURN.** | | | | | | |
| 1 | 7. 18. 38 | 2. 14 N | 7. 20. 29 | 2. 2 N | 15. 56 S | 22. 39 |
| 7 | 7. 18. 49 | 2. 13 | 7. 21. 10 | 2. 2 | 16. 6 | 22. 16 |
| 13 | 7. 19. 0 | 2. 13 | 7. 21. 49 | 2. 3 | 16. 16 | 21. 52 |
| 19 | 7. 19. 11 | 2. 13 | 7. 22. 28 | 2. 3 | 16. 25 | 21. 28 |
| 25 | 7. 19. 23 | 2. 13 | 7. 23. 5 | 2. 4 | 16. 35 | 21. 4 |

| Days of the Month. | Days of the Week. | Moon's Longitude at Noon. | Moon's Longitude at Midnight. | Moon's Latitude at Noon. | Moon's Latitud at Midn. |
|---|---|---|---|---|---|
| | | S. D. M. S. | S. D. M. S. | D. M. S. | D.M.S. |
| 1 | Tu. | 1. 1. 34. 25 | 1. 8. 51. 3 | 3. 59. 40 S | 3.31.29 S |
| 2 | W. | 1. 16. 13. 24 | 1. 23. 40. 40 | 2. 59. 18 | 2.23.44 |
| 3 | Th. | 2. 1. 11. 58 | 2. 8. 46. 11 | 1. 45. 20 | 1. 4.50 S |
| 4 | F. | 2. 16. 22. 9 | 2. 23. 58. 36 | 0. 23. 0 S | 0.19.18 N |
| 5 | Sa. | 3. 1. 34. 20 | 3. 9. 8. 9 | 1. 1. 12 N | 1.41.51 |
| 6 | *Su.* | 3. 16. 38. 58 | 3. 24. 5. 49 | 2. 20. 27 | 2.56.19 |
| 7 | M. | 4. 1. 27. 51 | 4. 8. 44. 31 | 3. 28. 51 | 3.57.34 |
| 8 | Tu. | 4. 15. 55. 15 | 4. 22. 59. 47 | 4. 22. 9 | 4.42.21 |
| 9 | W. | 4. 29. 57. 58 | 5. 6. 49. 50 | 4. 58. 3 | 5. 9.14 |
| 10 | Th. | 5. 13. 35. 22 | 5. 20. 14. 51 | 5. 15. 55 | 5.18.15 |
| 11 | F. | 5. 26. 48. 34 | 6. 3. 16. 51 | 5. 16. 21 | 5.10.27 |
| 12 | Sa. | 6. 9. 40. 3 | 6. 15. 58. 38 | 5. 0. 45 | 4.47.32 |
| 13 | *Su.* | 6. 22. 12. 59 | 6. 28. 23. 35 | 4. 31. 1 | 4.11.32 |
| 14 | M. | 7. 4. 30. 18 | 7. 10. 35. 10 | 3. 49. 19 | 3.24.41 |
| 15 | Tu. | 7. 16. 36. 58 | 7. 22. 36. 42 | 2. 57. 56 | 2.29.22 |
| 16 | W. | 7. 28. 34. 36 | 8. 4. 31. 7 | 1. 59. 18 | 1.28. 5 |
| 17 | Th. | 8. 10. 26. 29 | 8. 16. 21. 3 | 0. 55. 59 N | 0.23.23 N |
| 18 | F. | 8. 22. 15. 2 | 8. 28. 8. 47 | 0. 9. 26 S | 0.42. 7 S |
| 19 | Sa. | 9. 4. 2. 28 | 9. 9. 56. 24 | 1. 14. 19 | 1.45.41 |
| 20 | *Su.* | 9. 15. 50. 49 | 9. 21. 46. 2 | 2. 16. 3 | 2.44.5 |
| 21 | M. | 9. 27. 42. 14 | 10. 3. 39. 49 | 3. 12. 9 | 3.37.21 |
| 22 | Tu. | 10. 9. 39. 4 | 10. 15. 40. 21 | 4. 0. 15 | 4.20.38 |
| 23 | W. | 10. 21. 44. 9 | 10. 27. 50. 29 | 4. 38. 14 | 4.52.49 |
| 24 | Th. | 11. 4. 0. 8 | 11. 10. 13. 27 | 5. 4. 9 | 5.12. 3 |
| 25 | F. | 11. 16. 30. 47 | 11. 22. 52. 41 | 5. 16. 17 | 5.16.45 |
| 26 | Sa. | 11. 29. 19. 26 | 0. 5. 51. 34 | 5. 13. 13 | 5. 5.39 |
| 27 | *Su.* | 0. 12. 29. 24 | 0. 19. 13. 14 | 4. 53. 54 | 4.37.59 |
| 28 | M. | 0. 26. 3. 19 | 1. 2. 59. 50 | 4. 17. 53 | 3.53.44 |
| 29 | Tu. | 1. 10. 2. 49 | 1. 17. 12. 6 | 3. 25. 41 | 2.54. 3 |
| 30 | W. | 1. 24. 27. 34 | 2. 1. 48. 44 | 2. 19. 9 | 1.41.31 |
| 31 | Th. | 2. 9. 15. 3 | 2. 16. 45. 43 | 1. 1. 45 | 0.20.33 |

| Days of the Month. | Days of the Week. | ☽'s Age. | ☽'s Paſſage over Merid. | ☽'s Right Aſcen. at Noon. | ☽'s Right Aſc. at Midn. | ☽'s Declinat. at Noon. | ☽'s Declin. at Midn. |
|---|---|---|---|---|---|---|---|
| | | | H. M. | D. M. | D. M. | D. M. | D. M. |
| 1 | Tu. | 14 | 9. 53 | 30. 49 | 37. 36 | 8. 17 N | 11. 7 |
| 2 | W. | 15 | 10. 48 | 44. 38 | 51. 55 | 13. 51 | 16. 23 |
| 3 | Th. | 16 | 11. 46 | 59. 27 | 67. 14 | 18. 42 | 20. 43 |
| 4 | F. | 17 | 12. 50 | 75. 14 | 83. 25 | 22. 23 | 23. 39 |
| 5 | Sa. | 18 | 13. 54 | 91. 44 | 100. 4 | 24. 29 | 24. 51 |
| 6 | *Su.* | 19 | 14. 58 | 108. 23 | 116. 33 | 24. 45 | 24. 13 |
| 7 | M. | 20 | 15. 59 | 124. 33 | 132. 18 | 23. 15 | 21. 55 |
| 8 | Tu. | 21 | 16. 54 | 139. 46 | 146. 58 | 20. 15 | 18. 18 |
| 9 | W. | 22 | 17. 45 | 153. 53 | 160. 32 | 16. 9 | 13. 47 |
| 10 | Th. | 23 | 18. 32 | 166. 57 | 173. 9 | 11. 19 | 8. 44 |
| 11 | F. | 24 | 19. 16 | 179. 11 | 185. 4 | 6. 6 | 3. 26 N |
| 12 | Sa. | 25 | 19. 58 | 190. 52 | 196. 34 | 0. 46 N | 1. 52 S |
| 13 | *Su.* | 26 | 20. 40 | 202. 14 | 207. 53 | 4. 28 S | 7. 0 |
| 14 | M. | 27 | 21. 23 | 213. 33 | 219. 15 | 9. 26 | 11. 46 |
| 15 | Tu. | 28 | 22. 7 | 225. 1 | 230. 52 | 13. 59 | 16. 2 |
| 16 | W. | 29 | 22. 52 | 236. 48 | 242. 50 | 17. 56 | 19. 37 |
| 17 | Th. | 30 | 23. 40 | 248. 58 | 255. 13 | 21. 7 | 22. 22 |
| 18 | F. | 1 | 0 | 261. 33 | 267. 58 | 23. 24 | 24. 9 |
| 19 | Sa. | 2 | 0. 28 | 274. 27 | 280. 58 | 24. 39 | 24. 51 |
| 20 | *Su.* | 3 | 1. 18 | 287. 29 | 294. 0 | 24. 47 | 24. 25 |
| 21 | M. | 4 | 2. 7 | 300. 29 | 306. 54 | 23. 47 | 22. 52 |
| 22 | Tu. | 5 | 2. 55 | 313. 15 | 319. 31 | 21. 43 | 20. 18 |
| 23 | W. | 6 | 3. 41 | 325. 41 | 331. 47 | 18. 40 | 16. 49 |
| 24 | Th. | 7 | 4. 27 | 337. 48 | 343. 45 | 14. 46 | 12. 33 |
| 25 | F. | 8 | 5. 11 | 349. 40 | 355. 34 | 10. 11 | 7. 40 |
| 26 | Sa. | 9 | 5. 55 | 1. 28 | 7. 24 | 5. 3 S | 2. 21 S |
| 27 | *Su.* | 10 | 6. 40 | 13. 24 | 19. 30 | 0. 26 N | 3. 14 N |
| 28 | M. | 11 | 7. 27 | 25. 43 | 32. 6 | 6. 4 | 8. 52 |
| 29 | Tu. | 12 | 8. 18 | 38. 44 | 45. 35 | 11. 36 | 14. 12 |
| 30 | W. | 13 | 9. 13 | 52. 41 | 60. 4 | 16. 40 | 18. 53 |
| 31 | Th. | 14 | 10. 12 | 67. 44 | 75. 39 | 20. 51 | 22. 28 |

| Days of the Month. | Days of the Week. | Semidr. ☽ at Noon. | Semidr. ☽ at Midnight. | Hor. Par. ☽ at Noon. | Hor. Par. ☽ at Midnight. | Proport. log. at Noon. | Proport. log. at Midn. |
|---|---|---|---|---|---|---|---|
| | | M. S. | M. S. | M. S. | M. S. | | |
| 1 | Tu. | 16. 20 | 16. 27 | 59. 56 | 60. 21 | 4776 | 4746 |
| 2 | W. | 16. 33 | 16. 38 | 60. 43 | 61. 2 | 4719 | 4697 |
| 3 | Th. | 16. 42 | 16. 44 | 61. 17 | 61. 27 | 4681 | 4668 |
| 4 | F. | 16. 46 | 16. 46 | 61. 32 | 61. 32 | 4661 | 4661 |
| 5 | Sa. | 16. 45 | 16. 42 | 61. 27 | 61. 17 | 4668 | 4679 |
| 6 | *Su.* | 16. 38 | 16. 33 | 61. 4 | 60. 45 | 4694 | 4717 |
| 7 | M. | 16. 27 | 16. 21 | 60. 24 | 60. 1 | 4742 | 4770 |
| 8 | Tu. | 16. 14 | 16. 7 | 59. 34 | 59. 10 | 4802 | 4832 |
| 9 | W. | 16. 0 | 15. 52 | 58. 42 | 58. 14 | 4866 | 4901 |
| 10 | Th. | 15. 45 | 15. 38 | 57. 47 | 57. 22 | 4934 | 4966 |
| 11 | F. | 15. 31 | 15. 24 | 56. 57 | 56. 34 | 4998 | 5027 |
| 12 | Sa. | 15. 19 | 15. 13 | 56. 12 | 55. 52 | 5055 | 5081 |
| 13 | *Su.* | 15. 8 | 15. 4 | 55. 34 | 55. 18 | 5104 | 5125 |
| 14 | M. | 15. 0 | 14. 56 | 55. 4 | 54. 50 | 5144 | 5162 |
| 15 | Tu. | 14. 53 | 14. 51 | 54. 39 | 54. 30 | 5177 | 5189 |
| 16 | W. | 14. 49 | 14. 47 | 54. 22 | 54. 16 | 5199 | 5207 |
| 17 | Th. | 14. 46 | 14. 45 | 54. 11 | 54. 8 | 5214 | 5218 |
| 18 | F. | 14. 44 | 14. 44 | 54. 5 | 54. 4 | 5222 | 5223 |
| 19 | Sa. | 14. 44 | 14. 45 | 54. 4 | 54. 6 | 5223 | 5221 |
| 20 | *Su.* | 14. 45 | 14. 46 | 54. 9 | 54. 12 | 5217 | 5213 |
| 21 | M. | 14. 48 | 14. 50 | 54. 19 | 54. 26 | 5203 | 5194 |
| 22 | Tu. | 14. 52 | 14. 55 | 54. 34 | 54. 45 | 5183 | 5169 |
| 23 | W. | 14. 58 | 15. 3 | 54. 57 | 55. 12 | 5153 | 5133 |
| 24 | Th. | 15. 7 | 15. 11 | 55. 27 | 55. 45 | 5114 | 5090 |
| 25 | F. | 15. 17 | 15. 23 | 56. 5 | 56. 27 | 5064 | 5036 |
| 26 | Sa. | 15. 29 | 15. 36 | 56. 51 | 57. 16 | 5005 | 4973 |
| 27 | *Su.* | 15. 43 | 15. 50 | 57. 42 | 58. 9 | 4941 | 4907 |
| 28 | M. | 15. 58 | 16. 6 | 58. 37 | 59. 6 | 4872 | 4837 |
| 29 | Tu | 16. 14 | 16. 21 | 59. 33 | 59. 59 | 4804 | 4772 |
| 30 | W. | 16. 27 | 16. 33 | 60. 23 | 60. 45 | 4743 | 4717 |
| 31 | Th. | 16. 38 | 16. 42 | 61. 4 | 61. 19 | 4694 | 4677 |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Pollux. | 79. 1. 31 | 77. 22. 16 | 75. 33. 36 | 73. 44. 32 |
| 2 | | 64. 33. 32 | 62. 42. 17 | 60. 50. 45 | 58. 58. 56 |
| 3 | | 49. 35. 56 | 47. 42. 42 | 45. 49. 26 | 43. 55. 51 |
| 4 | | 34. 27. 24 | | | |
| 4 | Regulus. | 70. 23. 26 | 68. 29. 15 | 66. 35. 4 | 64. 40. 51 |
| 5 | | 55. 10. 50 | 53. 17. 13 | 51. 23. 47 | 49. 30. 33 |
| 6 | | 40. 8. 9 | 48. 16. 32 | 36. 25. 20 | 34. 34. 31 |
| 7 | | 25. 27. 11 | | | |
| 7 | Spica ♍ | 79. 26. 21 | 77. 37. 20 | 75. 48. 44 | 74. 0. 33 |
| 8 | | 65. 5. 46 | 63. 20. 6 | 61. 34. 52 | 59. 50. 9 |
| 9 | | 51. 12. 56 | 49. 30. 52 | 47. 49. 17 | 46. 8. 10 |
| 10 | | 37. 49. 54 | 36. 11. 46 | 34. 34. 8 | 32. 57. 1 |
| 8 | The Sun. | 120. 33. 53 | 118. 54. 55 | 117. 16. 22 | 115. 38. 15 |
| 9 | | 107. 33. 59 | 105. 58. 22 | 104. 23. 9 | 102. 48. 21 |
| 10 | | 95. 0. 28 | 93. 28. 3 | 91. 56. 1 | 90. 24. 21 |
| 11 | | 82. 51. 25 | 81. 21. 52 | 79. 52. 37 | 78. 23. 42 |
| 12 | | 71. 3. 42 | 69. 36. 34 | 68. 9. 41 | 66. 43. 4 |
| 13 | | 59. 33. 39 | 58. 8. 27 | 56. 43. 26 | 55. 18. 38 |
| 14 | | 48. 17. 29 | 46. 53. 45 | 45. 30. 10 | 44. 6. 44 |
| 15 | | 37. 11. 42 | | | |
| 21 | ♈ Arietis. | 97. 18. 37 | 95. 51. 52 | 94. 25. 1 | 92. 58. 6 |
| 22 | | 85. 42. 11 | 84. 14. 43 | 82. 47. 10 | 81. 19. 31 |
| 23 | | 73. 59. 46 | 72. 31. 29 | 71. 3. 5 | 69. 34. 35 |
| 24 | | 62. 10. 23 | | | |
| 24 | Aldebaran. | 92. 11. 33 | 90. 39. 9 | 89. 6. 32 | 87. 33. 42 |
| 25 | | 79. 45. 54 | 78. 11. 32 | 76. 36. 52 | 75. 1. 56 |
| 26 | | 67. 2. 44 | 65. 25. 55 | 63. 48. 46 | 62. 11. 16 |
| 27 | | 53. 58. 27 | 52. 18. 47 | 50. 38. 44 | 48. 58. 19 |
| 28 | | 40. 30. 30 | 38. 47. 47 | 37. 4. 42 | 35. 21. 16 |
| 29 | | 26. 39. 2 | 24. 53. 46 | 23. 8. 20 | 21. 22. 45 |
| 30 | Pollux. | 56. 19. 59 | 54. 30. 18 | 52. 40. 16 | 50. 49. 55 |
| 31 | | 41. 33. 28 | 39. 41. 22 | 37. 49. 5 | 35. 56. 37 |
| J. 1 | | 26. 32. 30 | | | |

Diſtances of ☽'s Center from ☉, and from Stars eaſt of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | | 71. 55. 4 | 70. 5. 12 | 68. 15. 0 | 66. 24. 26 |
| 2 | Pollux. | 57. 6. 49 | 55. 14. 25 | 53. 21. 48 | 51. 28. 59 |
| 3 | | 42. 2. 15 | 40. 8. 34 | 38. 14. 52 | 36. 21. 9 |
| 4 | | 62. 46. 38 | 60. 52. 30 | 58. 58. 30 | 57. 4. 37 |
| 5 | Regulus. | 47. 37. 7 | 45. 44. 45 | 43. 52. 15 | 42. 0. 2 |
| 6 | | 32. 44. 6 | 30. 4. 8 | 29. 4. 38 | 27. 15. 39 |
| 7 | | 72. 12. 45 | 70. 25. 22 | 68. 38. 25 | 66. 51. 53 |
| 8 | Spica ♍ | 58. 5. 44 | 56. 21. 51 | 54. 38. 25 | 52. 55. 27 |
| 9 | | 44. 27. 32 | 42. 47. 24 | 41. 7. 24 | 39. 28. 35 |
| 10 | | 31. 20. 26 | | | |
| 8 | | 114. 0. 33 | 112. 23. 18 | 110. 46. 26 | 109. 10. 0 |
| 9 | | 101. 13. 58 | 99. 40. 0 | 98. 6. 26 | 96. 33. 15 |
| 10 | | 88. 53. 3 | 87. 22. 8 | 85. 51. 33 | 84. 21. 19 |
| 11 | The Sun. | 76. 55. 6 | 75. 26. 49 | 73. 58. 49 | 72. 31. 7 |
| 12 | | 65. 16. 42 | 63. 50. 35 | 62. 24. 43 | 60. 59. 4 |
| 13 | | 53. 54. 2 | 52. 29. 38 | 51. 5. 24 | 49. 41. 21 |
| 14 | | 42. 43. 27 | 41. 20. 19 | 39. 57. 18 | 38. 34. 26 |
| 20 | | 103. 4. 50 | 101. 36. 24 | 100. 11. 54 | 98. 45. 18 |
| 21 | α Arietis. | 91. 31. 6 | 90. 4. 0 | 88. 36. 49 | 87. 9. 32 |
| 22 | | 79. 51. 47 | 78. 23. 56 | 76. 55. 59 | 75. 27. 55 |
| 23 | | 68. 5. 58 | 66. 37. 14 | 65. 8. 24 | 63. 39. 27 |
| 24 | | 86. 0. 39 | 84. 27. 21 | 82. 53. 47 | 81. 19. 58 |
| 25 | | 73. 26. 42 | 71. 51. 11 | 70. 15. 21 | 68. 39. 12 |
| 26 | Aldeba- | 60. 33. 26 | 58. 55. 14 | 57. 16. 40 | 55. 37. 44 |
| 27 | ran. | 47. 17. 31 | 45. 36. 19 | 43. 54. 45 | 42. 12. 49 |
| 28 | | 33. 37. 29 | 31. 53. 18 | 30. 8. 50 | 28. 24. 4 |
| 29 | | 19. 36. 59 | | | |
| 29 | | 63. 34. 56 | 61. 46. 47 | 59. 58. 14 | 58. 9. 19 |
| 30 | Pollux. | 48. 59. 13 | 47. 8. 11 | 45. 16. 53 | 43. 25. 19 |
| 31 | | 34. 3. 59 | 32. 11. 13 | 30. 18. 22 | 28. 25. 29 |

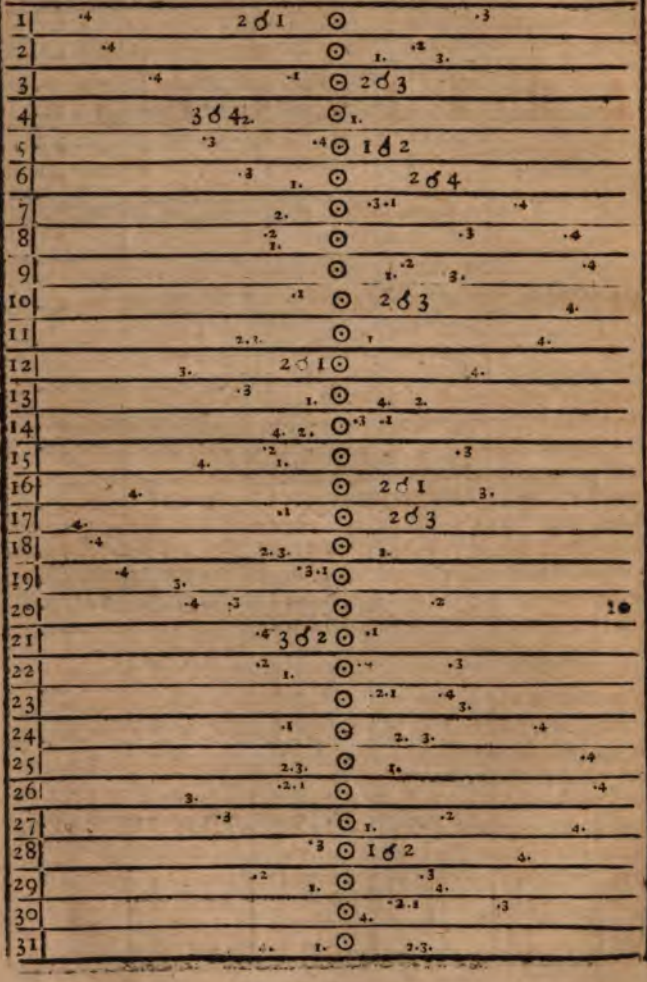
Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | Noon. | 3 Hours. | 6 Hours. | 9 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Fomal-haut. | 61. 24. 13 | 63. 7. 17 | 64. 50. 52 | 66. 35. 0 |
| 2 | | 75. 23. 9 | 77. 10. 5 | 78. 57. 22 | 80. 45. 1 |
| 3 | | 89. 47. 45 | | | |
| 3 | α Arietis. | 28. 59. 1 | 30. 39. 7 | 32. 20. 32 | 34. 3. 12 |
| 4 | | 42. 51. 11 | 44. 38. 48 | 46. 26. 50 | 48. 15. 17 |
| 5 | | 57. 21. 21 | | | |
| 5 | Aldeba-ran. | 25. 40. 31 | 27. 33. 9 | 29. 25. 45 | 31. 18. 20 |
| 6 | | 40. 39. 40 | 42. 31. 23 | 44. 22. 50 | 46. 14. 2 |
| 7 | | 55. 25. 35 | 57. 14. 55 | 59. 3. 52 | 60. 52. 28 |
| 8 | | 69. 49. 35 | 71. 35. 49 | 73. 21. 38 | 75. 7. 3 |
| 9 | | 83. 47. 52 | 85. 30. 49 | 87. 13. 21 | 88. 55. 29 |
| 10 | Pollux. | 53. 7. 24 | 54. 47. 1 | 56. 26. 18 | 58. 5. 13 |
| 11 | | 66. 14. 36 | 67. 51. 28 | 69. 28. 2 | 71. 4. 17 |
| 12 | | 79. 1. 2 | | | |
| 12 | Regulus. | 43. 5. 24 | 44. 39. 34 | 46. 13. 30 | 47. 47. 12 |
| 13 | | 55. 32. 24 | 57. 4. 49 | 58. 37. 4 | 60. 9. 5 |
| 14 | | 67. 46. 37 | 69. 17. 39 | 70. 48. 32 | 72. 19. 17 |
| 15 | | 79. 50. 59 | | | |
| 15 | Spica ♍ | 26. 20. 6 | 27. 47. 31 | 29. 15. 0 | 30. 42. 37 |
| 16 | | 38. 1. 51 | 39. 29. 52 | 40. 57. 54 | 42. 25. 56 |
| 22 | The Sun. | 38. 58. 44 | 40. 21. 10 | 41. 43. 41 | 43. 6. 20 |
| 23 | | 50. 1. 32 | 51. 25. 2 | 52. 48. 42 | 54. 12. 31 |
| 24 | | 61. 14. 25 | 62. 39. 25 | 64. 4. 39 | 65. 30. 6 |
| 25 | | 72. 41. 2 | 74. 8. 2 | 75. 35. 19 | 77. 2. 54 |
| 26 | | 84. 25. 20 | 85. 54. 50 | 87. 24. 39 | 88. 54. 50 |
| 27 | | 96. 31. 18 | 98. 3. 44 | 99. 36. 34 | 101. 9. 48 |
| 28 | | 109. 2. 7 | 110. 37. 51 | 112. 14. 0 | 113. 50. 35 |
| 27 | Fomal-haut. | 43. 35. 52 | 45. 7. 43 | 46. 40. 21 | 48. 13. 48 |
| 28 | | 56. 11. 43 | 75. 49. 17 | 59. 27. 27 | 61. 6. 13 |
| 29 | | 69. 28. 37 | 71. 10. 42 | 72. 53. 15 | 74. 36. 19 |
| 30 | | 83. 18. 26 | | | |
| 30 | α Arietis. | 23. 18. 9 | 24. 47. 58 | 26. 20. 11 | 27. 54. 36 |
| 31 | | 36. 13. 26 | 37. 57. 4 | 39. 41. 36 | 41. 27. 2 |
| J. 1 | | 50. 24. 28 | | | |

Diſtances of ☽'s Center from ☉, and from Stars weſt of her.

| Days. | Stars Names. | 12 Hours. | 15 Hours. | 18 Hours. | 21 Hours. |
|---|---|---|---|---|---|
| | | D. M. S. | D. M. S. | D. M. S. | D. M. S. |
| 1 | Fomal- | 68. 19. 42 | 70. 4. 54 | 71. 50. 31 | 73. 36. 37 |
| 2 | haut. | 82. 33. 0 | 84. 21. 19 | 86. 9. 51 | 87. 58. 40 |
| 3 | α Arietis. | 35. 47. 1 | 37. 31. 53 | 39. 17. 32 | 41. 3. 58 |
| 4 | | 50. 4. 8 | 51. 53. 17 | 53. 42. 29 | 55. 31. 50 |
| 5 | | 33. 10. 52 | 35. 3. 19 | 36. 55. 36 | 38. 47. 44 |
| 6 | | 48. 4. 59 | 49. 55. 36 | 51. 45. 55 | 53. 35. 54 |
| 7 | Aldeba- | 62. 40. 41 | 64. 28. 29 | 66. 15. 55 | 68. 2. 56 |
| 8 | ran. | 76. 52. 3 | 78. 36. 37 | 80. 20. 46 | 82. 4. 31 |
| 9 | | 90. 37. 11 | | | |
| 9 | | 46. 25. 13 | 48. 6. 19 | 49. 47. 3 | 51. 27. 24 |
| 10 | Pollux. | 59. 43. 47 | 61. 21. 59 | 62. 59. 51 | 64. 37. 24 |
| 11 | | 72. 40. 13 | 74. 15. 51 | 75. 51. 12 | 77. 26. 15 |
| 12 | | 49. 20. 40 | 50. 53. 55 | 52. 26. 57 | 53. 59. 47 |
| 13 | Regulus. | 61. 40. 57 | 63. 12. 37 | 64. 44. 7 | 66. 15. 27 |
| 14 | | 73. 49. 53 | 75. 20. 21 | 76. 50. 41 | 78. 20. 54 |
| 15 | Spica ♍ | 32. 10. 17 | 33. 38. 6 | 35. 5. 58 | 36. 33. 53 |
| 16 | | 43. 53. 58 | | | |
| 22 | | 44. 29. 6 | 45. 51. 59 | 47. 15. 1 | 48. 38. 12 |
| 23 | | 55. 36. 31 | 57. 0. 41 | 58. 25. 4 | 59. 49. 38 |
| 24 | | 66. 55. 48 | 68. 21. 43 | 69. 47. 54 | 71. 14. 20 |
| 25 | The Sun. | 78. 30. 46 | 79. 58. 56 | 81. 27. 24 | 82. 56. 13 |
| 26 | | 90. 25. 23 | 91. 56. 18 | 93. 27. 35 | 94. 59. 15 |
| 27 | | 102. 43. 26 | 104. 17. 29 | 105. 51. 56 | 107. 26. 49 |
| 28 | | 115. 27. 36 | 117. 5. 2 | 118. 42. 55 | 120. 21. 13 |
| 26 | | 37. 37. 29 | 39. 5. 41 | 40. 34. 49 | 42. 4. 53 |
| 27 | Fomal- | 49. 48. 1 | 51. 22. 55 | 52. 58. 30 | 54. 34. 46 |
| 28 | haut. | 62. 45. 36 | 64. 25. 32 | 66. 6. 1 | 67. 47. 3 |
| 29 | | 76. 19. 51 | 78. 3. 51 | 79. 48. 17 | 81. 33. 10 |
| 30 | α Arietis. | 29. 31. 4 | 31. 9. 27 | 32. 49. 19 | 34. 30. 38 |
| 31 | | 43. 13. 22 | 45. 0. 21 | 46. 47. 55 | 48. 35. 59 |

## Configurations of the SATELLITES of JUPITER at 6 o' Clock in the Morning.



# EXPLANATION and USE

## OF THE

# ARTICLES

Contained in the

## ASTRONOMICAL and NAUTICAL EPHEMERIS.

IT may be proper firſt to premiſe, that all the Calculations are made according to apparent Time by the Meridian of the Royal Obſervatory at Greenwich. They are likewiſe adapted to apparent Noon, except where they are otherwiſe diſtinguiſhed, as the Eclipſes and Configurations of Jupiter's Satellites, the Moon's Places, &c, computed for Midnight, and the Diſtances of the Moon from the Sun and Stars for every third Hour; which are all computed to the apparent Times ſet down.

Apparent Time is that deduced immediately from the Sun, whether from the Obſervation of his paſſing the Meridian, from his Altitude obſerved at a Diſtance from the Meridian, or from his obſerved Riſing or Setting. This Time is different from that ſhewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here ſuppoſed, according to the Method of Aſtronomers, to begin at Noon, or 12 Hours later than the civil Day of the ſame Denomination, and to be counted up to 24 Hours, or the ſucceeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the ſame in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they

differ; for whereas in the civil Account a freſh Day is ſuppoſed to begin at Midnight, and the Hours to begin over again, in this Method the Day is ſtill continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Diſtances put down to January 10, 15 Hours, belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The firſt Column of the firſt Page of each Month contains the Day of the Month; the Second, the Day of the Week expreſſed conciſely by the initial Letter or Letters, *Su.* ſtanding for Sunday, M. for Monday, Tu. for Tueſday, W. for Wedneſday, Th. for Thurſday, F. for Friday, and Sa. for Saturday: The third Column exhibits the Sundays and Feſtivals of the Church of England, and other remarkable Days: The laſt Column ſhews at Top the Moon's Phaſes, or the Times of new and full Moon, and of the firſt and laſt Quarter, or two Quadratures with the Sun: Beneath are contained miſcellaneous Phænomena, namely, Eclipſes of the Sun and Moon, and Occultations of Planets or fixed Stars not leſs than the fourth Magnitude, by the Moon, as they ſhould happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not leſs than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60°. North and 40°. South: The Conjunctions, Oppoſitions and Quadratures of the ſuperior Planets with the Sun; and the Conjunctions and greateſt Elongations of the inferior Planets from the Sun, the Entrance of the Sun into the ſeveral Signs, and any other remarkable Phænomena.

The Stars are expreſſed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star, is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Caſe is the ſame with Reſpect to the Occultation of a Star or Planet by the Moon, only this is further diſtinguiſhed by the Addition of Im. or Immerſion, to ſignify the Diſappearance behind the Moon; and Em. or Emerſion, to ſignify the Re-appearance of the ſame. Thus $8^d$ ☽ ☌ ♍ $16^h$. 22′. ſignifies that the Moon will be in Conjunction with the Star ☌ ♍ on the Eighth Day at $16^h$. 22′. excluſive of Parallax: And $10^d$. ☽ ♂ ♊ Imm. $9^h$ 14′. Em. $10^h$. 23′ ſignifies that the Moon will eclipſe ♂ ♊ on the 10th Day, the Immerſion being at $9^h$ 14′. and at $10^h$. 23′. apparent Time at Greenwich.

The

The Occultations ſet down are thoſe only viſible at Greenwich; and the Circumſtances will not differ very widely in moſt Parts of the Kingdom; but in very diſtant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be ſaid of Eclipſes of the Sun.

Eclipſes of the Sun, and Occultations of fixed Stars by the Moon, if obſerved in Places whoſe Latitude and Longitude are well determined, may be applied to the Correction of the lunar Tables; but if made in Places whoſe Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpoſe an accurate Calculation muſt be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of ſettling the Longitudes of Places, though a very accurate one, leſs convenient in Uſe for Perſons not much verſed in aſtronomical Calculations. However, this ought not to diſcourage Travellers or Mariners from endeavouring to make theſe Obſervations as often and as carefully as poſſible, when they ſhall happen to be at any Place whoſe Longitude they have Reaſon to think has not been at all or but indifferently determined; ſince the neceſſary Calculations may be made at any Time afterwards by themſelves, at leiſure, or referred to the Skill of Aſtronomers and Mathematicians.

Eclipſes of the Moon are not liable to this Inconvenience; the Longitude of any Place, where an Eclipſe has been obſerved, being deduced immediately by taking the Difference of the Time of the Obſervation and that ſet down in the Ephemeris, and converting it into Degrees, at the Rate of 15 to One Hour, &c. or more briefly by Table Pages 6. 7, 8. of the Tables requiſite to be uſed with the Ephemeris. But as the Beginning or Ending of an Eclipſe of the Moon cannot be generally obſerved nearer than One Minute, and ſometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a ſingle Obſervation of the Beginning or End nearer than a Degree. It is unneceſſary to mention that even this Point of Exactneſs will often be of great Service. If both the Beginning and End of the Eclipſe be obſerved, a conſiderably greater Degree of Exactneſs will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not leſs than the fourth Magnitude, which may prove Occultations in ſome inhabited Parts of the Globe, are evidently deſigned to inſtruct Mariners or Travellers to look out

frequently for ſuch Obſervations; which if they happen to prove Occultations, and are carefully obſerved, will afford a certain Means of determining the Longitude of the Place of Obſervation.

The Days of the Oppoſitions, Quadratures, &c. of the Planets with Reſpect to the Sun, are Times at which they ought to be obſerved in fixed Obſervatories, for ſettling the Elements of their Orbits by a Series of ſeveral Years Obſervations.

The Two firſt Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Aſcenſion in Time, Declination, and the Equation of Time, with the Difference from Day to Day.

The Longitude of the Sun is made uſe of in moſt of the ſucceeding Calculations of the Ephemeris, and may ſerve either to verify them, or to make other ſimilar Calculations at a different Time of the Day. Particularly it may ſerve with the Help of the Moon's Longitude, to find the Diſtance of the Moon from the Sun at any Time, independent of the Diſtances contained in the Four laſt Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion muſt be made according to its daily Increaſe: Saying as $24^h$. is to the Hour from Noon reckoned by the Meridian of Greenwich, ſo is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it muſt be firſt reduced thereto, by adding or ſubſtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15°, and One Minute of Time to 15 Minutes, or more briefly by Pages 6, 7, and 8, of the requiſite Tables) according as the Place is to the Weſt or to the Eaſt of Greenwich. Example: Suppoſe any one ſhould want to know the Sun's Longitude, January 19, 1767, at $4^h$. $35'$. being in 21° $15'$. Longitude Eaſt of Greenwich. The Difference of Longitude turned into Time by Table Page 6, is $1^h$. $25'$ which ſubſtracted from $4^h$. $35'$. becauſe the Place is Eaſt of Greenwich, leaves $3^h$. $10'$. for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding Noon is, $9^s$. 29°. $18'$. $2''$. and the following Noon is, $10^s$. 0°. $19'$. $4''$. the Difference is, 1°. $1'$. $2''$. or $61'.2''$. the daily Variation. Then ſay, as $24^h$. is to $3^h$. $10'$. ſo is $61'$ $2''$ to $8'$. $3''$. which added to $9^s$. 29°. $18'$. $2''$. the Sun's Longitude on the preceding

preceding Noon, gives 9ˢ. 29°. 26′. 5″ the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude ſerves alſo to compute the Aberration of the fixed Stars and Planets.

The Sun's right Aſcenſion in Time is uſeful to the practical Aſtronomer in regular Obſervatories, who adjuſts his Clocks by ſidereal Time. It is alſo uſeful to him for converting apparent into ſidereal Time; as ſuppoſe that of an Eclipſe of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks: For this Purpoſe, the Sun's right Aſcenſion at the preceding Noon, together with the Increaſe of right Aſcenſion from Noon, muſt be added to the apparent Time of the Phænomenon ſet down in the Ephemeris.

The Sun's right Aſcenſion in Time ſerves alſo to compute the apparent Time of a known Star's paſſing the Meridian: Thus ſubſtract the Sun's right Aſcenſion in Time at Noon from the Star's right Aſcenſion in Time, the Remainder is the apparent Time of the Star's paſſing the Meridian nearly; from which the proportional Part of the daily Increaſe of the Sun's right Aſcenſion for this apparent Time from Noon being ſubſtracted, leaves the correct Time of the Star's paſſing the Meridian.

Hence the apparent Time may be found from an obſerved Altitude of a known fixed Star, ſuppoſe one contained Page 12 or 13 of the requiſite Tables; as will be explained hereafter.

The Sun's right Aſcenſion in Time is alſo uſeful for computing the Time of the Moon and Planets paſſing the Meridian, as will be ſhewn under their proper Articles.

The Sun's Declination is neceſſary to find the Latitude, whether at Sea or Land, from the Meridian Altitude obſerved; it is alſo requiſite for finding the Latitude from Two Altitudes obſerved with the Interval of Time meaſured by a Watch; it ſerves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compaſs; it is required jointly with the Latitude of the Place and the Sun's horary Angle to compute his Altitude, if neglected to be obſerved at the Time of taking the Moon's Diſtance from the Sun for finding the Longitude, being uſeful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Diſtance; it is alſo neceſſary to calculate the apparent Time from an obſerved Altitude of the Sun at a Diſtance

from

from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Riſing; which, though a leſs accurate Method than the former of obtaining the Time, may yet be uſeful when that cannot be had. For any of theſe Purpoſes, the Sun's Declination muſt be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increaſe or Decreaſe, in like Manner as was ſhewn with Reſpect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or ſubſtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which ſhould be ſhewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Paſſage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Aſcenſion uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Aſcenſion being rendered further unequal on Account of the Obliquity of the Ecliptic to the Equator, from theſe Cauſes it ariſes that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too ſlow or too ſoon to the Meridian for an equable Motion, ſuch as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the laſt Column but One of Page 2d; and when applied according to its Title to the Apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it is propoſed to convert mean Time into apparent, this is done by a contrary Proceſs, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; *viz.* ſubſtracting inſtead of adding, and adding inſtead of ſubſtracting.

The Equation of Time being ſet down in the Ephemeris for the Noon at Greenwich, Proportion muſt be made according to the daily Difference, to find what it ſhould be at any given Time reduced to the ſame Meridian, as in the preceding Articles. The laſt Column of this Page, containing the daily Differences of the Equation, is deſigned for this Purpoſe.

As

As often as it may be required to make any Calculations from aſtronomical Tables, and the Time given be apparent Time; it is neceſſary firſt to apply the Equation of Time thereto to convert it into mean Time, the Tables being diſpoſed according to mean Motions. Thus the Articles contained in the Ephemeris anſwering to Noon were computed to $0^h$. increaſed, or 24 Hours diminiſhed, by the Equation of Time: And the Moon's Places ſet down for Midnight were computed to $12^h$. increaſed or diminiſhed by the Equation of Time.

What has been ſhewn concerning the Equation of Time chiefly reſpects the Aſtronomer, the Mariner having little to do with it in computing his Longitude from the Moon's Diſtances from the Sun and Stars obſerved at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the ſame which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter preſcribed.

But if Watches made upon Mr. John Harriſon's or other equivalent Principles ſhould be brought into Uſe at Sea, the apparent Time deduced from an Altitude of the Sun muſt be corrected by the Equation of Time, and the mean Time found compared with that ſhewn by the Watch, the Difference will be the Longitude in Time from the Meridian by which the Watch was ſet; as near as the Going of the Watch can be depended upon.

The Equation of Time was computed for the Ephemeris of 1767 from the Table, Page 3d of Mayer's Tables; but on Account of that Table being made only to the neareſt Second without Decimals, and the Neglect of the ſmall Equations of the Sun, the Calculations of that Article in the Year 1767, cannot always be depended upon nearer than Two Seconds. For the Year 1768 and the following Years it will be computed in the ſtrict Manner explained in my Remarks upon that Subject, in the Philoſ. Tranſact. Vol. liv. P. 342 for the Year 1764; namely, by taking the Difference of the Sun's true right Aſcenſion, and his mean Longitude corrected by the Equation of the Equinoxes in right Aſcenſion, and turning it into Time at the Rate of $1'$. to $15'$. &c. The Equation of Time will be additive or ſubſtractive as the Sun's true right Aſcenſion is greater or leſs than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is neceſſary to reduce the obſerved Altitude of his upper or lower Limb to that

of

of the Centre; alſo to reduce the obſerved Diſtance of the Moon's neareſt Limb from the Sun's neareſt Limb to the Diſtance of the Centres. It is alſo uſeful to Aſtronomers to verify or aſcertain the Exactneſs of the Scale of their Micrometers, by Compariſon with the Meaſure of the Sun's horizontal Diameter. This Practice is particularly uſeful in ſolar Eclipſes, when the Diſtance of the Cuſps or the Verſe Sine of the uneclipſed Part has been meaſured with the Micrometer. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations reſpecting the Sun and Moon are made, ſuppoſe the Semidiameter at the mean Diſtance to be 16'.2",8. which Mr. Mayer ſays he deduced from above 130 Obſervations taken with his Six Foot mural Quadrant, which ſeemed to him not ill adapted to the Purpoſe. It may not be amiſs to take this Opportunity to remark that the Quadrant here mentioned was given to the Univerſity of Gottingen by his late Majeſty, and was made by Mr. John Bird after the Model of the Eight Foot mural Arch, which he finiſhed for the Royal Obſervatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Obſervations with his Six Foot mural Arch, from the Year 1756, to the Time of his Deceaſe; with it he ſettled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at 23°. 28'. 16". which Dr. Bradley ſettled by his Obſervations made in the Years 1750 and 1751, at 23°.28'. 18". The Difference is agreeable to what ought to ariſe from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about ½ a Second in a Year. The ſame Inſtrument he alſo uſed in ſettling the Elements of his ſolar Tables; and it is moſt probable that with the ſame he ſettled his Table of Refractions at the End of his ſolar Tables; the Agreement of this Table with Dr. Bradley's, ſee Page 2d of requiſite Tables, (being both ſuited to the ſame Temperature of the Air) is ſo great, that they ſeem rather like One and the ſame than Two different Tables.

The Time of the Sun's Semidiameter paſſing the Meridian, ſerves to reduce an Obſervation of a Tranſit of the preceding or ſubſequent Limb over the Meridian to that of the Centre, when only One was obſerved. It ſignifies a Portion of apparent Time, or even mean Time, the Difference being abſolutely inſenſible upon ſo ſmall an Interval. It is found thus: Increaſe the Sun's Semidiameter in the Ratio of the Coſine of his Declination to the Radius, to find his Semidiameter in right Aſcenſion, which turned into Time at the Rate of 1'. to 15'. and 1", to 15". gives the

Time

Time required. The Sun's Semidiameter in right Aſcenſion is readily found by adding the Log. Coſine of his Declination to the logiſtic Logarithm of his Semidiameter, the Sum is the logiſtic Logarithm of his Semidiameter in right Aſcenſion; which divided by 15 gives the Time of his Semidiameter paſſing the Meridian. If the Clock by which the Obſervation is made be regulated according to ſidereal Time, this Quantity muſt be increaſed in the Ratio of 365 to 366, if great Preciſion is required.

From the Time of the Sun's Semidiameter paſſing the Meridian may be alſo found the Time of its paſſing the horizontal or vertical Wire of a Quadrant or Sextant, which on ſome Occaſions may have its Uſe.—The hourly Motion of the Sun is uſeful in computing ſolar and lunar Eclipſes; alſo in correcting the aſſumed Longitude of the Ship, in order to find the Time from an Obſervation of the Diſtance of the Moon from the Sun, independant of the Diſtances contained in the nautical Ephemeris; See Britiſh Mariner's Guide, Page 49, and Table at the End of the ſame, Page 25, which is alſo copied at Page 14 of requiſite Tables. The Logarithm of the Sun's Diſtance is uſeful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node ſignifies its mean Longitude, and is neceſſary for finding the Equation of the equinoctial Points both in Longitude and right Aſcenſion, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Aſcenſion and Declination.

The Eclipſes of Jupiter's Satellites are well known to afford the readieſt, and for general Practice the beſt Method of ſettling the Longitudes of Places at Land; and it is by their Means principally that Geography has been ſo much reformed within a Century paſt, and the Poſition of the moſt diſtant Places determined to equal Accuracy with the neareſt. It was hoped that ſome Means might be found of uſing proper Teleſcopes on Shipboard to obſerve theſe Eclipſes, and could this be effected, it would be of great Service in aſcertaining the Longitude of a Ship from Time to Time. In my Voyage to Barbadoes under the Direction of the Commiſſioners of Longitude, I made a full Trial of the late Mr. Irwin's Marine Chair propoſed for this Purpoſe, but found it totally impracticable to derive any Advantage from the Uſe of it; and, conſidering the great Power requiſite in a Teleſcope for making theſe Obſervations well, and the Violence as well as

Irregularities of the Motion of a Ship, I am afraid the complete Management of a Teleſcope on Shipboard will always remain among the Deſiderata. However, I would not be underſtood to mean to diſcourage any Attempt founded upon good Principles to get over this Difficulty.

The Teleſcopes proper for obſerving the Eclipſes of Jupiter's Satellites, are commoſt refracting Teleſcopes, from 15 to 20 Feet, reflecting Teleſcopes of 18 Inches or Two Feet, and Teleſcopes of Mr. Dollond's Conſtruction with Two Object Glaſſes from Five to 10 Feet; or, which are ſtill more convenient, thoſe of $3\frac{1}{2}$ Feet, which he has lately found a Method of conſtructing with Three Object Glaſſes, which are as manageable as reflecting Teleſcopes, and perform as much as thoſe which he makes of 10 Feet with Two Object Glaſſes.

The Eclipſes of Jupiter's Satellites are obſerved by Aſtronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the ſake of Compariſon with the correſponding Obſervations which may be made by Perſons in different Parts of the Globe, whereby the Longitude of ſuch Places will be accurately aſcertained. It is indeed to be lamented that Perſons who viſit diſtant Countries are not more diligent to multiply Obſervations of this Kind, for want of which, the Obſervations made by Aſtronomers on Shore loſe Half their Uſe, and the Improvement of Geography ſeems to be at a Stand. But it is to be hoped that an Emulation will ſpring up among thoſe who may have Opportunities of rendering ſo uſeful a Service to the Public, to incite them to watch diligently for the Occaſions of obſerving theſe Eclipſes carefully, particularly of the Firſt and Second, which are moſt exact for the Purpoſe. The Eclipſes carefully calculated and ſet down in the Ephemeris, will ſerve to advertiſe them and Obſervers in general of the Times when they ſhould attend to theſe Obſervations. The Perſon who ſhall be under any Meridian different from Greenwich, muſt turn his Difference of Longitude into Time: See Table Page 6, 7, and 8, and add it to or ſubſtract it from the Time of the Eclipſe ſet down in the Ephemeris, according as he is to the Eaſt or Weſt of Greenwich, to find the apparent Time at which the Eclipſe will happen at his Meridian, nearly. He muſt further take care to regulate his Watch or Clock by apparent Time, or at leaſt to know the Difference, as well in order to apprize him of the Time to look out for the

the Eclipſe, as for aſcertaining the apparent Time exactly at which he ſhall obſerve it. Equal Altitudes of the Sun or Stars taken with an aſtronomical Quadrant afford the beſt Means of regulating Clocks and Watches for occaſional Obſervations; or they may be taken with a Hadley's Quadrant, by Reflection from a Baſon of Water or Quickſilver, or from the Horizon of the Sea, if the Obſerver has an open Proſpect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above mentioned, at leaſt Two or Three Points of the Compaſs diſtant from the Meridian, but the nearer to the Eaſt or Weſt the better, the Latitude of the Place being known, or being found by Obſervations of the Meridian Altitude of the Sun or Stars made on Purpoſe. It will be better to take ſeveral Altitudes in order to take a Mean of the Reſults for greater Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star, will be obſerved when we come to treat of the Method of finding the Longitude by the Obſervations of the Diſtance of the Moon from the Sun and Stars by the Help of the Ephemeris.

The Obſerver being in a Place whoſe Longitude is well known, ſhould be ſettled at his Teleſcope Three Minutes before the expected Time of an Immerſion of the firſt Satellite; Six or Eight Minutes before that of the ſecond and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on Account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he muſt begin to look out for the Eclipſe proportionably ſooner: Thus if the Longitude of the Place is uncertain to 30 Degrees, anſwering to 12 Minutes of Time, he ought to fix himſelf to his Teleſcope 12 Minutes ſooner than is mentioned above. Nevertheleſs when he has obſerved One Eclipſe of any Satellite, and thereby found the Error of the Tables, he may allow the ſame Correction to the Calculations of the Ephemeris for ſeveral Months, which will advertiſe him very nearly of the Time of expecting the Eclipſes of the ſame Satellite, and diſpenſe with his attending ſo long.

The Immerſions ſignify the Inſtant of the Diſappearance of the Satellite by entering into the Shadow of Jupiter; and the Emerſions ſignify the firſt Inſtant of its Appearance at coming

ing out of the ſame. They generally happen when the Satellite is at ſome Diſtance from the Body of Jupiter, except near the Oppoſition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Oppoſition of Jupiter to the Sun the Immerſions and Emerſions happen on the Weſt Side of Jupiter, and after the Oppoſition on the Eaſt Side; but if an aſtronomical Teleſcope be uſed, which reverſes Objects, the Appearances will be directly the contrary. Before the Oppoſition, the Immerſions only of the firſt Satellite are viſible; and after the Oppoſition, the Emerſions only. The ſame is generally the Caſe with reſpect to the ſecond Satellite; both the Phænomena of the ſame Eclipſe are frequently obſerveable in the Two outer Satellites. The Immerſions and Emerſions marked with an Aſteriſk in the Ephemeris are thoſe viſible at Greenwich.

To know if an Eclipſe will be viſible in any Place, find if Jupiter is 8°, or 10°. above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celeſtial Globe: Otherwiſe, the Time of the Sun's Riſing and Setting may be found for any Latitude by a Table of ſemidiurnal Arcs, contained in the popular Book called the Mariner's Compaſs Rectified, and many other Books; the Time of Jupiter's Riſing and Setting may alſo be found from the Time of his paſſing the Meridian and Declination ſet down in the Ephemeris, with the Help of the ſame Table of ſemidiurnal Arcs; adding or ſubſtracting the ſemidiurnal Arc anſwering to the ſame Declination of the Sun: Remembering always that if Jupiter's Declination and the Latitude of the Place are of the ſame Denomination, the ſemidiurnal Arc will be more than Six Hours, and if they are of contrary Denominations, it will be leſs than Six Hours.

The Immerſion or Emerſion of any Satellite being carefully obſerved in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Obſervation from the correſponding Time ſhewn in the Ephemeris, which muſt be turned into Degrees, &c. by Table Page 6, 7, and 8; and will be Eaſt or Weſt of Greenwich, as the Time obſerved is more or leſs than that of the Ephemeris.

Example: Suppoſe an Emerſion of the firſt Satellite ſhould be obſerved at the Cape of Good-Hope, May 9, 1767, at 19$^{h}$. 46′. 45″. apparent Time: The Time by the Ephemeris being

being $9^h$. 33′. 12″. the Difference is $1^h$. 13′. 33″. whence by Table Page, 6, 7, and 8, the Longitude of the Cape ſhould be 18°. 23′ 15″. Eaſt of Greenwich, becauſe the Time ſuppoſed to be obſerved at the Cape is more than that of the Ephemeris.

It may not be uſeleſs here to obſerve that the Longitude of the Cape of Good Hope $1^h$. 13′. 33″=18°. 23′. 15″. ſet down in the Britiſh Mariner's Guide, is that of the Town; the Latitude alſo belongs to the ſame; being both determined from the Obſervations of Meſſrs. Maſon and Dixon, who went thither under the Direction of the Royal Society, and obſerved the Tranſit of Venus in the Year 1761. Hence, by the Help of the Charts, I find the Longitude of the Cape Point or Promontory 18°. 45′. Eaſt of Greenwich, and its Latitude 34°. 30′. S. the Longitude of Cape Falſo, 19°. 15′. E. and its Latitude 34°. 34′ S. If theſe Determinations of the Situations of the Cape Point and Cape Falſo are in any reſpect uncertain, it ariſes from the Imperfection of the Charts I was obliged to make uſe of, in reducing the Longitude and Latitude from the Cape Town to the Two mentioned Points: For from the near Agreement of the Abbeé de la Caille's Obſervations with thoſe of Meſſrs. Maſon and Dixon, it is probable that the Situation of few Places is better determined than that of the Cape Town: But if any one has Poſſeſſion of any Manuſcript or printed Charts of theſe Parts that he thinks may be depended upon, or has any Opportunity of determining the Points in Queſtion relatively to each other from the Compariſon of ſeveral Journals of Ships, he may perhaps fix theſe Places with more Certainty than is here pretended to.

It is to be obſerved that a correſpondent Obſervation of an Eclipſe of a Satellite of Jupiter, made under a well known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Obſervation made in a Meridian whoſe Longitude is required; but if no correſponding Obſervation can be obtained, as is frequently the Caſe, it will be beſt to find what Correction the Calculations of the Ephemeris require by the neareſt Obſervations to the given Time that can be obtained; which Correction applied to the Calculation of the given Eclipſe in the Ephemeris, renders it almoſt equivalent to an actual Obſervation.

The Longitudes and Latitudes of the Planets, Page 4, ſerve to know where to look for them in the Heavens, and when

when their Places may be conveniently ſettled by comparing them with fixed Stars by the Help of a Micrometer in a Teleſcope. They alſo ſhew when they are in the moſt important Points of their Orbits, where it is moſt material to obſerve them. They alſo ſerve to enable Perſons leſs ſkilled to diſtinguiſh them from the fixed Stars. Their Declinations and apparent Time of paſſing the Meridian are particulary uſeful to Aſtronomers who are furniſhed with Quadrants and Tranſit Inſtruments well fixed in the Meridian, in ſetting their Inſtruments for obſerving their right Aſcenſions and Declinations.

The apparent Time of a Planet's paſſing the Meridian may be computed thus; the Planet's right Aſcenſion being calculated from its Longitude and Latitude, and turned into Time, ſubſtract the Sun's right Aſcenſion at Noon in Time from it, to find the Time of the Planet's paſſing the Meridian nearly, which call T; take the Difference of the ☉ and Planets daily Variations in right Aſcenſion in Time; if the Planet is progreſſive in right Aſcenſion, or the Sum if it is retrograde, which call X; then ſay, by the Rule of Proportion;

As $24^h \mp X$; T :: X : e and T $\pm$ will be the correct Time of the Planet's paſſing the Meridian. The upper Signs are to be uſed both to X and e if the Planet's progreſſive Motion in right Aſcenſion be greater than that of the Sun; in any other Caſe the lower Signs are to be made uſe of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the ☉ and Planet's daily Motion in right Aſcenſion, anſwering to the Time of the Planet's paſſing the Meridian, found nearly, in Proportion to $24^h$. and take a further like proportional Part of this proportional Part; and again of this laſt, and ſo on as far as is neceſſary. The Sum of all theſe proportional Parts added to the Time of the Planet's paſſing the Meridian found nearly, if the Planet's progreſſive Motion in right Aſcenſion is greater than that of the Sun, otherwiſe ſubſtracted, gives the apparent Time of the Planet's paſſing the Meridian.

Example: Let it be required to find the Time of the Moon's paſſing the Meridian, July 1 1767.

The Sun's right Aſcenſion in Time July 1ſt is, $6^h. 40'. 25''$. and July 2d, $6^h. 44'. 33''$. by the Ephemeris. Therefore his daily Motion in right Aſcenſion is $4'. 8''$. The Moon's right Aſcenſion July 1ſt at Noon by the Ephemeris, is $159°. 2'.$ anſwering to $10^h. 36'. 8''$. of Time, and July 2d is, $169°. 39'.$ anſwering

ſwering to $10^h$. 18′. 36″. The Difference is, 42′. 28″. of Time, from which 4′. 8″. being ſubſtracted leaves 38′. 20″. Subſtract $6^h$. 40′ 25″. the Sun's right Aſcenſion July 1ſt, at Noon from $10^h$. 36′. 8″, the Moon's right Aſcenſion the ſame Noon, the Remainder $3^h$. 55′. 43″. is the Approximate Time of the Moon's paſſing the Meridian. The proportional Part of 38′. 20″ anſwering to this, is 6′. 17″ and the proportional Part of 6′. 17″. is 9″ ; therefore 6′. 17″ and 9″ or 6′. 26″ added to $3^h$. 55′. 43″ give $4^h$. 2′. 9″, the apparent Time of the Moon's paſſing the Meridian. In the Ephemeris it is $4^h$. 2′. It may alſo be computed by taking the Difference of the Moon's right Aſcenſions at Noon and Midnight, but then half the Sun's daily Variation in right Aſcenſion muſt be made uſe of, and Proportion muſt be made for 12 inſtead of 24 Hours: And if the Moon paſſed the Meridian after Midnight, the Sun's right Aſcenſion at Midnight muſt be uſed, which is a Mean between his right Aſcenſions on the preceding and ſubſequent Noon. For the Planet's, it will be ſufficient to take the firſt proportional Part only.

The Configurations of Jupiter's Satellites, Page 5, exhibit the apparent Poſitions of the Satellites with reſpect to each other, and to Jupiter at ſuch an Hour of the Evening or Night as they are moſt likely to be obſerved, and ſerve to diſtinguiſh the Satellites from one another. Jupiter is diſtinguiſhed by the Mark ☉, and the Satellites by Points with Figures annexed, the Figure 1 ſignifying the firſt Satellite, 2 the ſecond Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the ſuperior Parts of their Orbits, or furtheſt from the Earth, when they are marked to the right Hand or Weſt of Jupiter approaching him; or to the left Hand or Eaſt of Jupiter receding from him; but are in the inferior Part of their Orbits, or neareſt to the Earth, when they are marked to the right Hand or Weſt of Jupiter receding from him, or to the left or Eaſt of Jupiter approaching him. The Cypher o ſometimes annexed to the Figure of the Satellite towards the Margin, ſignifies that it is inviſible on the Face of Jupiter; and the black Mark ●, ſignifies that it is inviſible, being eclipſed in Jupiter's Shadow, or behind Jupiter, and eclipſed by his Body.

The 7th and 5 following Pages of each Month contain the Moon's Place, and all the Circumſtances relating to her Motions,

tions, and her Diſtances from the Sun and proper Stars, from which her Diſtance ſhould be obſerved for finding the Longitude at Sea. The Longitudes, Latitudes, and Declinations of the Moon, and Time of her paſſing the Meridian, afford the like Uſes with the ſame Circumſtances of the Planetary Motions, and many more beſides. For the ſake of greater Preciſion, the Moon's Longitude, Latitude, Right Aſcenſion, Declination, Semidiameter, horizontal Parallax, with its logiſtic or proportional Logarithm, are computed twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greateſt Exactneſs.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at $16^h. 22'. 16''$. Firſt to find the Longitude. The Moon's Longitude, July 16, at $12^h.$ is $0^s. 6°. 40'. 25''.$ and July 17 at Noon, $0^s. 13°. 47'. 48''.$ the Difference $7°. 7'. 23''.$ is the Moon's Motion in 12 Hours; ſay then, by the Rule of Proportion,

As $12^h.$ is to $4^h. 22'. 16''.$ (the Exceſs of $16^h. 22'. 16''.$ above $12^h.$) ſo is $7°. 7'. 23''.$ to $2°. 35'. 41''.$ which added to $0^s. 6°. 40'. 25''.$ the Moon's Longitude at $12^h.$ gives $0^s. 9°. 16'. 6''$, the Moon's Longitude nearly; but this muſt be corrected on Account of the Moon's unequal Motion in 12 Hours, by Page 11 of requiſite Tables; for this Purpoſe take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and ſet them down in Order one after another, as follows.

| | | 1ſt Diff. | 2d. Diff. |
|---|---|---|---|
| | s ° ′ ″ | ° ′ ″ | ′ ″ |
| July 16, Noon | 11. 29. 29. 34. | | |
| | | 7. 10 51. | |
| Midnight | 0. 6. 40. 58. | | 3. 28. |
| | | 7. 7. 23. | |
| 17, Noon | 0. 13. 47. 24. | | 3. 44. |
| | | 7. 3. 39. | |
| Midnight | 0. 20. 51. 27. | | |

Take their Differences, $7°. 10'. 51''. 7°. 7'. 23''. 7°. 3'. 39''.$ take the Differences of theſe Differences, or the 2d Differences, $3'. 28''. 3'. 44''.$ and take their Mean which is $3'. 36''.$ Now look for the Correction in Page 11 of requiſite Tables anſwering to $4^h. 22'$ after Midnight, found on the Side, and $3'\ 36''$ at Top, $21''$ will be found under $3'.$ and $28''.$ under $4'.$ the the Difference is $7''.$ whence $36''$ will require $4''$, and the Correction ſought is $21'' + 4'' = 25''.$ which, according to the Remark at the Bottom of the Table, muſt be added (becauſe

cauſe the Motion in 12 Hours or firſt Differences are decreaſing to 0ˢ. 9°. 16′. 6″. the Moon's Longitude found by even Proportion; whence the Moon's true Longitude is 0ˢ. 9°. 16′. 31″. and is as correct as the Longitudes from which it is deduced.

N. B. If the firſt Differences of the Four Longitudes of the Moon taken out firſt increaſe and then decreaſe, or, vice verſâ, firſt decreaſe and then increaſe, take half the Difference of the Two ſecond Differences for the Mean ſecond Difference, with which take the Correction from Page 11, and add or ſubſtract it as the 1ſt. firſt Difference is greater or leſs than the third firſt Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time, and ſet them down in Order, and take their firſt and ſecond Differences, and the mean of the Two ſecond Differences; find the proportional Part of the Middle firſt Difference anſwering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table Page 11 with the Hour from Noon or Midnight on the Side, and the mean ſecond Difference at Top, take out the correſponding Number of Seconds, which added to or ſubſtracted from the proportional Part found above, according as the Motion in 12 Hours or firſt Differences are decreaſing or increaſing; or, more generally, according as 1ſt firſt Difference is greater or leſs than third firſt Difference, gives the proportional Part corrected; which now added to or ſubſtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in theſe 12 Hours is increaſing or decreaſing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16ʰ. 22′. 16″.

| | ☽'s Lat. by the Ephem. | 1ſt Dif. | 2d Dif. | Mean of 2d Dif. |
|---|---|---|---|---|
| | ° ′ ″ | ′ ″ | ′ ″ | ′ ″ |
| July 16. Noon | 4 31 10 N. | | | |
| | | 18 26 | | |
| Midnight | 4 49 36 | | 4 36 | 4 40 |
| | | 13 50 | 4 44 | |
| 17 Noon | 5 3 26 | | | |
| | | 9 6 | | |
| Midnight | 5 12 32 | | | |

The Moon's Latitude July 16 at Midnight being 4°. 49′. 36″. N. and the Motion in the next 12 Hours being 13′. 50″. ſay by Proportion;

As 12ʰ. is to 4ʰ. 22′. 16″. ſo is 13′. 50″. to 5′. 2″; but this muſt be corrected by adding 33″. the Correction from Page 11, anſwering to the Hour 4ʰ. 22′. and the Mean Second Difference 4′ 40″, becauſe the firſt Differences are decreaſing, or rather becauſe the firſt of them 18′. 26″. is greater than the laſt of them 9′. 6″. therefore the proportional Part corrected is 5′. 2″.+33″=5′. 35″, which added to 4°. 49′. 36″. gives 4°. 55′ 11″. N. the Moon's Latitude correct.

Remarks on ſome Circumſtances neceſſary to be attended to, in order to obtain and apply the Correction of ſecond Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the firſt Difference in that Place.

II. If the Three firſt Differences firſt increaſe and then decreaſe, or vice verſa, firſt decreaſe and then increaſe, Half the Difference of the Two ſecond Differences is to be taken for the mean ſecond Difference.

III. If the Series of Four Latitudes taken out ſhould firſt increaſe and then decreaſe about the Moon's greateſt Latitudes, take the Sum of the Two firſt Differences ſtanding on each Side of the greateſt Latitude for the ſecond Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the ſimple proportional Part firſt found; and to the Latitude ſo corrected, add always in this Caſe the Correction from Table Page 11, anſwering to the Mean of the Two ſecond Differences.

Before I quit this Subject of Interpolation by ſecond Differences, I ſhall point out another Method, by which the ſame End may be obtained more readily, and with fewer Rules, by thoſe who are well acquainted with algebraical Subſtraction and Addition, and the Manner of applying the Signs in thoſe Operations. Subſtract each Latitude from the following for the firſt Differences, to which prefix the Sign — if the Latitudes decreaſe; and ſubſtract each firſt Difference, thus found, from the following one of the ſame Order for the ſecond Differences. Half the Sum of the Two ſecond Differences

ferences ſtanding on each Side of the Interval to be interpolated, is to be accounted the mean ſecond Difference; the Correction correſponding to it by Table Page 11, is to be applied always with the contrary Sign.

Theſe Operations are to be performed, and the Signs to be applied as in algebraic Subſtraction and Addition. Note further, if the Four given Latitudes change their Denomination, call the ſecond Latitude +, and thoſe of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the ſame Manner as her Latitude; but as the Correction ariſing from ſecond Differences will never exceed $2\frac{1}{2}'$, this may be neglected on moſt Occaſions: but if any one is deſirous to obtain the Declination true to a Minute, the Correction eaſily applied, as ſhewn above.

The other Articles of Page 7, and 8, *viz.* the Moon's right Aſcenſion, her Semidiameter, horizontal Parallax, with its Logarithm, and the Diſtances contained in the Four laſt Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of ſecond Differences. The proportional Part of the Moon's Longitude, *&c.* for any Hour, may be found very readily by the Help of the Table of proportional Logarithms at the End of the requiſite Tables: For which conſult the Explanation of thoſe Tables.

The Moon's Longitude and Latitude are uſed in computing her Diſtances from the Sun and Stars contained in the Four laſt Pages of the Month, as well as in the Appulſes to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are neceſſary for computing the Eclipſes of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They alſo facilitate the Calculation of the Longitude of any Place from an Eclipſe of the Sun, or an Occultation of a Star or Planet by the Moon obſerved: Or, if the Meridian be well known, the Parallax and Semidiameter ſerve to deduce the Moon's true Place in the Heavens from the Obſervation, which compared with that given by the Ephemeris ſhews the Error of the Tables, whatever it be at that Time. The Moon's Semidiameter and Parallax are applied in correcting almoſt all Obſervations of the Moon. The logiſtic Logarithms of the Moon's Parallax, ſerve further to facilitate the Calculations of Parallaxes, but if the Table of proportional Logarithms at the End of the requiſite Tables be made uſe,

of, which will be moſt convenient; the conſtant Quantity 0.4771 muſt be added to the logiſtic Logarithms of the Moon's horizontal Parallax contained in the Ephemeris of 1767, to reduce them to proportional Logarithms. It will be more convenient to ſubſtitute proportional Logarithms of the Moon's Parallax inſtead of the logiſtic Logarithms in a future Ephemeris.

The Moon's right Aſcenſion and Declination are uſeful to compute her Altitude at any Time, particularly at the Obſervation of her Diſtance from the Sun or a Star, ſuppoſing it was neglected to be or could not be obſerved properly; which latter Caſe may ſometimes happen in the Night, though I think but rarely; the utmoſt Accuracy not being required for the Calculations of Refraction and Parallax. See Britiſh Mariner's Guide. Page 57. The Moon's Declination, with her Semidiameter and Parallax, ſerve for finding the Latitude by the Meridian Altitude of her upper or lower Limb obſerved at Sea. See Britiſh Mariner's Guide, Page 93. The Moon's right Aſcenſion and Declination ſerve alſo to compute the Time from her Altitude obſerved at the Obſervation of her Diſtance from a Star; whence the Longitude may be inferred, though no Altitude of the Sun or a Star was taken for regulating the Time. See Britiſh Mariner's Guide, Page 61.

The Diſtances of the Moon from the Sun and fixed Stars, contained in the Four laſt Pages of the Month, are ſet down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are deſigned to relieve the Mariner from the Neceſſity of a Calculation, which he might think prolix and troubleſome, and to enable him, when compared with the ſame Diſtances obſerved carefully at Sea, to infer his Longitude readily and with little Danger of Miſtake to a Degree of Exactneſs that may be thought ſufficient for moſt nautical Purpoſes. But uſeful and valuable as the Practice of this Method may be at preſent, it is a Remark not unworthy our Notice, that there is Room to hope, by future Improvements of the lunar Tables, and the Introduction of a more accurate Method of conſtructing Inſtruments, it may be carried to a much higher Degree of Perfection.

The Moon's Diſtance are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Obſervation, and a Means of attaining a greater Degree of Exactneſs. The Diſtances from the Sun

are computed between 40° and 120° of Diſtance. While the Moon is between the Diſtances of 20° and 40° from the Sun, her Diſtance is computed only from a Star on the contrary Side that the Sun is. When ſhe is between the Diſtances of 40° and 90° from the Sun, her Diſtance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Diſtance is computed from Two Stars, one on each Side of her; though ſtill her Diſtance is computed alſo from the Sun from 90° to 120°. Though the Diſtance of the Moon from the Sun or Star, well obſerved with a good Inſtrument, is ſufficient to determine the Longitude, with the Help of the Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to ſtill greater Accuracy, if the Obſerver takes the Diſtance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90 and 120° Diſtance from the Sun, from the Sun and Two Stars, if he can be ſo lucky as to obtain theſe ſeveral Obſervations.

The Longitude being computed from the Obſervations made with each Star reſpectively, the Mean of the Reſults is to be taken as probably approaching neareſt to the true Longitude. In particular the Moon's Diſtance ſhould be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, ſince the Mean of the Reſults will probably be at leaſt as exact again as either ſeparately, I mean as far as depends on any Imperfection of the Inſtruments, and unavoidable ſmall Errors ariſing in the Uſe of them; Errors of theſe Kinds having a natural tendency to correct each other; for that ſmall Error which ariſes from the lunar Tables will affect the Reſult from either Star equally. But the Error of Mr. Mayer's laſt lunar Tables here made uſe of, ſcarce ever exceeding 1′ at the moſt, and ſeldom amounting to 20″. the Uncertainty hence ariſing in the Determination of the Longitude can ſcarcely exceed half a Degree, and generally will not exceed 10 Miles.

The Diſtances ſet down in the Ephemeris, afford the Obſerver a ready Means of knowing the Star from which the Moon's Diſtance is to be obſerved; for he has nothing to do but to ſet his Quadrant to the Diſtance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent Time eſtimated nearly by the Meridian of Greenwich; and direct his Sight to the Eaſt or Weſt of the Moon, according as the Diſtance at Greenwich is found in Page 9 and

10,

10, or in Two laſt Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he ſeeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the ſame Thing, in the Line of the Moon's ſhorter Axis produced. The Star is always one of the brighteſt, ſo that there is little Danger of miſtaking another for it, if the preceding Directions are carefully obſerved. The Time at Greenwich is eſtimated nearly by turning the ſuppoſed Longitude from Greenwich into Time, by Table Page 6, 7, and 8, and adding it to or ſubſtracting it from the Apparent Time at the Ship, as its Longitude is Weſt or Eaſt of Greenwich. It will be ſufficient if the Diſtance be computed from the Ephemeris within 10′. or 20′. for ſetting the Quadrant. The principal Uſe of the Diſtances of the Moon from the Sun and fixed Stars; namely, in determining the Longitude by Compariſon with the correſponding Diſtances obſerved at Sea, will be ſhewn hereafter in its proper Order, in the Diſſertation explaining the Method of computing the Longitude at Sea by the Help of the Ephemeris.

The Diſtances contained in the Ephemeris were computed ſtrictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method ſhewn for computing the Moon's Latitude, Page 17—19: Except that the Correction of ſecond Differences at the Middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two ſecond Differences, and at the firſt and third Quarter of the Interval was taken $\frac{1}{4}$ of the Correction juſt found at the Middle of the Interval; inſtead of conſulting Table Page 11, which would however have given the ſame Reſult. But, at the firſt 12 Hours when the Diſtances of the Moon from a Star begin, and the laſt 12 Hours when the Diſtances end, there being only One ſecond Difference inſtead of Two ſecond Differences on each Side to take a Mean of, this Method fails in theſe Caſes, and therefore the following is to be ſubſtituted in its ſtead, being derived from Sir Iſaac Newton's Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. ult.

From Four Diſtances at Noon and Midnight computed ſtrictly, to interpolate Three Diſtances at the 3d, 6th, and 9th Hour of the firſt or laſt Interval.

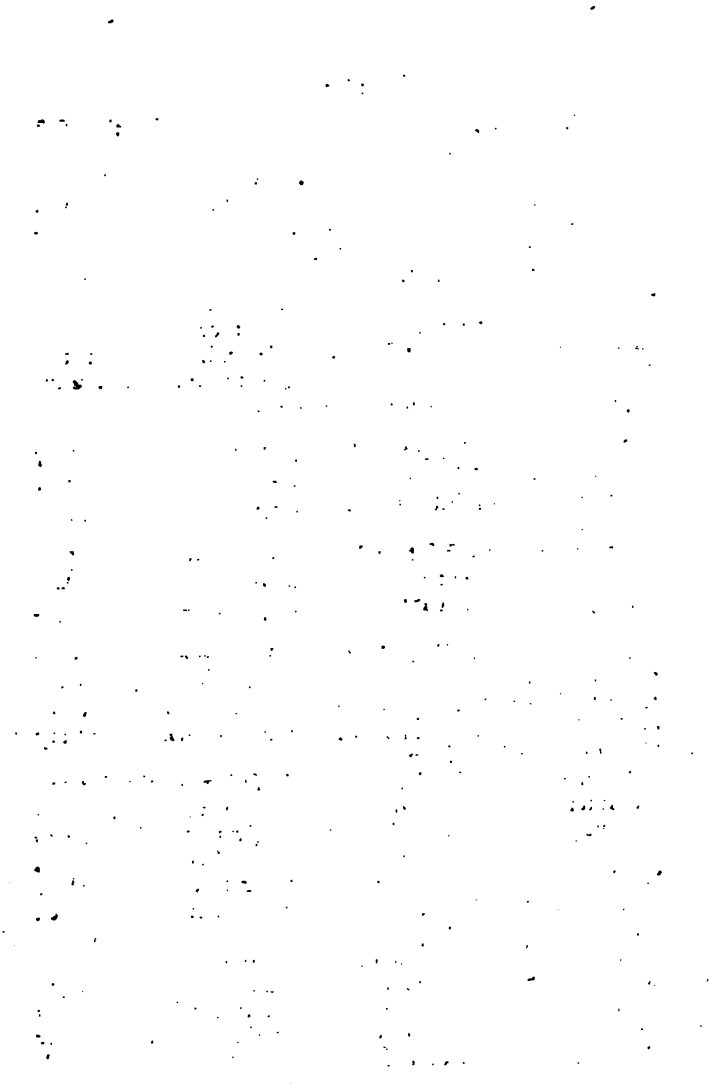
Subſtract

Subſtract each Diſtance from the following, for the firſt Differences, and prefix the Sign —, if the Diſtances decreaſe. Subſtract each firſt Difference thus found from the following one of the ſame Order, for the ſecond Differences: And in like Manner ſubſtract the firſt 2d Difference from the following for the third Difference; applying the Signs as in algebraic Subſtraction. Denote the firſt or laſt firſt Difference by $b$, the firſt or laſt ſecond Difference by $c$; according as the Interpolation to be made is for the firſt or laſt 12 Hours, denote alſo the third Difference by $d$; and, $a$ being put to ſignify the Diſtance at the Beginning of the Interval, the interpolated Diſtances will be as follows:

| | |
|---|---|
| At 3d Hour of firſt Interval | $a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$ |
| At 6th Hour of firſt Interval | $a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$ |
| At 9th Hour of firſt Interval | $a + \frac{3}{4}b - \frac{3}{32}c + \frac{5}{128}d$ |
| Or | |
| At 3d Hour of laſt Interval | $a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$ |
| At 6th Hour of laſt Interval | $a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$ |
| At 9th Hour of laſt Interval | $a + \frac{3}{4}b - \frac{3}{32}c - \frac{7}{128}d$ |

In adapting theſe Formulæ to Numbers, great Care muſt be taken about the right Application of the Signs. Thus if $b$, $c$ or $d$ is Negative, apply the Number expreſſing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the firſt and laſt Intervals, a new ſecond Difference has been ſuppoſed in arithmetical Progreſſion with the Two given ones, in order to take a Mean between it and the firſt or laſt ſecond Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the ſame as if the above Formulæ had been uſed: But at the Interpolation of the firſt and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+\frac{1}{128}d$ or third Difference, to Number found at the firſt Quarter of the Interval, and $-\frac{1}{128}d$ to that found at the third Quarter of the Interval; equally the ſame whether it be the firſt or laſt Interval.



# RIGHT ASCENSIONS

AND

# ZENITH DISTANCES

OF THE

# MOON:

DEDUCED FROM

## DR. BRADLEY'S OBSERVATIONS.

MADE BETWEEN

SEPTEMBER 13th, 1750, and NOVEMBER 2d, 1760.

| Years. | Days. N.S. | Mean Time of Tranſ. of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Corr. — |
|---|---|---|---|---|---|---|---|---|
| 1750 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. |
| Sept. | 13 | 9. 58. 5 | 1 | 322. 16. 17 | 63. 6. 27 | L U | 1.52 | 15,2 |
| | 17 | 13. 35. 35 | 2 | 20. 44. 22 | 38. 23. 20 | L U | 0.47 | 10,8 |
| | 19 | 15. 32. 10 | 2 | 51. 56. 3 | 30. 10. 0 | U L | 0.33 | 9,3 |
| | 23 | 19. 19. 2 | 2 | 112. 45. 9 | 32. 30. 35 | L L | 0.37 | 9,7 |
| | 24 | 20. 8. 15 | 2 | 126. 4. 25 | 36. 3. 16 | L L | 0.41 | 10,4 |
| ::: | 26 | 21. 41. 27 | 2 | 150. 31. 9 | 44. 44. 22: | C E | 0.56 | 12,0 |
| Oct. | 10 | 7. 44. 21 | 1 | 315. 21. 43 | 65. 26. 36 | L | 2. 5 | 15,6 |
| | 12 | 9. 27. 17 | 1 | 343. 8. 3 | 54. 13. 37 | L L | 1.20 | 13,6 |
| | 13 | 10. 20. 11 | 1 | 357. 22. 58 | 48. 1. 11 + | L L | 1. 4 | 12,5 |
| | 14 | 11. 15. 9 | 1 | 12. 8. 43 | 41. 58. 34½ | L L | 0.51 | 11,5 |
| | 15 | 12. 15. 8 | 1 | 28. 10. 2 | 36. 1. 39 | L L | 0.41 | 10,4 |
| | 17 | 14. 16. 58 | 2 | 60. 40. 56 | 29. 9. 42½ | L U | 0.32 | 9,2 |
| Nov. | 4 | 35.6. 22: | 1 | 282. 50. 57 | 73. 43. 48 | L | 3.14 | 17,1 |
| | 5 | 4. 47. 2 | 1 | 296. 32. 12 | 70. 53. 22 | L L | 2.45 | 16,6 |
| | 6 | 5. 36. 56 | 1 | 310. 1. 47 | 67. 0. 14 | L L | 2.13 | 15,9 |
| | 7 | 6. 26. 16 | 1 | 323. 23. 2 | 62. 13. 59 | L L | 1.48 | 15,0 |
| | 9 | 8. 5. 51 | 1 | 350. 19. 12 | 50. 54. 58 | L L | 1.11 | 13,1 |
| | 12 | 10. 51. 19 | 1 | 34. 45. 23 | 34. 31. 33 | L L | 0.39 | 10,1 |
| | 14 | 12. 58. 14 | 2 | 68. 32. 30 | 28. 36. 46 | L U | 0.32 | 9,0 |
| | 19 | 17. 32. 34 | 2 | 142. 14. 33 | 42. 6. 32 | U L | 0.51 | 11,5 |
| Dec. | 2 | 2. 44. 20 | 1 | 292. 23. 23 | 71. 46. 14½ | L | 2.53½ | 16,7 |
| | 6 | 5. 59. 25 | 1 | 245. 14. 6 | 52. 59. 56 | L L | 1.16 | 13,4 |
| | 8 | 7. 40. 12 | 1 | 12. 28. 24 | 41. 40. 44½ | L L | 0.51½ | 11,4 |
| | 9 | 8. 34. 48 | 1 | 27. 8. 50 | 36. 38. 24 | L L | 0.42 | 10,5 |
| | 10 | 9. 32. 56 | 1 | 42. 42. 17 | 32. 34. 32½ | L L | 0 36½ | 9,7 |
| | 11 | 10. 34. 6 | 1 | 59. 1. 22 | 29. 54. 41½ | L L | 0.33 | 9,3 |
| | 12 | 11. 37. 54 | C. | 76. 0. 13 | 28. 23. 21 | L L | | 9,0 |
| | 18 | 16. 53. 27 | 2 | 161. 1. 19 | 49. 53. 30 | L L | 1. 8 | 12,8 |
| | 21 | 18. 59. 11 | 2 | 195. 29. 45 | 64. 8. 31 | L L | 1.57 | 15,4 |
| | 22 | 19. 42. 31 | 2 | 207. 20. 41 | 68. 6. 49½ | L L | 2.19½ | 16,1 |
| | 31:: | 2. 20. 38 | 1 | 315. 1. 49 | 65. 0. 26 | C E | 2. 2 | 15,5 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Cor. — |
|---|---|---|---|---|---|---|---|---|
| 1751 | | H. M. S. | | D. M. S. | D. M. S. | | M.S. | S. |
| Jan. | 7:: | 8. 20. 20 | I | 52. 6. 6 | 30. 51. 31 | L | 0.34 | 8,5 |
| | 8 | 9. 20. 24 | I | 68. 8. 44 | 29. 10. 24 | L | 0.32½ | 8,1 |
| | 9 | 10. 21. 3 | I | 84. 20. 13 | 29. 8. 28+ | L | 0.42– | 8,1 |
| | 11 | 12. 17. 40 | C. | 115. 32. 34 | 33. 27. 28 | C. | | 8,9 |
| | 17 | 16. 53. 54 | 2 | 150. 42. 13 | 62. 13. 52 | L | 1.48 | 14,0 |
| | 18 | 17. 36. 52 | 2 | 202. 27. 30 | 66. 26. 43 | L | 2.10 | 14,8 |
| Feb. | 6 | 9. 9. 57 | I | 94. 6. 34 | 30. 1. 9 | L | 0.33 | 8,3 |
| | 7 | 10. 5. 58 | I | 109. 8. 15 | 31. 50. 57½ | U | 0.36 | 8,7 |
| | 9 | 11. 48. 39 | I | 136. 51. 0 | 40. 15. 35 | L | 0.48 | 10,1 |
| | 10 | 12. 37. 38 | 2 | 150. 6. 56 | 45. 7. 38 | L | 0.56 | 11,0 |
| | 15 | 16. 15. 7 | 2 | 209. 33. 50 | 68. 25. 58 | L | 2.23 | 15,1 |
| | 19 | 19. 27. 27 | 2 | 261. 43. 18 | 75. 16. 9:: | CE | 3.32 | 16,3 |
| | 20 | 20. 19. 7 | 2 | 275. 39. 35 | 74. 36. 33: | L cor. | by R. | 16,2 |
| Mar. | 5 | 7. 5. 9 | I | 89. 26. 16 | 29. 48. 8 | L | 0.33 | 8,3 |
| | 8 | 9. 43. 45 | I | 132. 9. 12 | 38. 13. 29 | U | by R. | 9,7 |
| | 15 | 14. 55. 14 | 2 | 217. 8. 16 | 68. 25. 58 | L | dub. | 15,4 |
| | 19 | 18. 9. 10 | 2 | 269. 41. 50 | 74. 50. 35 | L | 3.28 | 16,3 |
| | 20 | 18. 59. 50 | 2 | 283. 22. 55 | 73. 13. 59 | L | 3. 8 | 16,0 |
| | 31 | 3. 58. 46 | I | 68. 20. 23 | 29. 49. 34 | L | by R. | 8,3 |
| Apr. | 1 | | | | 29. 46. 7 | L | by R. | 8,3 |
| | 2 | 5. 56. 34 | I | 99. 50. 41 | 30. 42. 27 | U | dub. | 8,5 |
| | 3 | 6. 50. 51 | I | 114. 26. 14 | 33. 26. 11 | U | 0.37 | 8,9 |
| | 6 | 9. 13. 49 | I | 153. 13. 52 | 46. 14. 43 | U | 0.59 | 11,2 |
| | 9 | 11. 22. 6 | I | 188. 21. 3 | 61. 7. 56 | L | 1.42 | 13,8 |
| | 10 | 12. 6. 21 | C. | 200. 25. 37 | 65. 6. 26 | C. | 2. 2 | 14,6 |
| | 11 | 12. 51. 48 | 2 | 212. 48. 26 | 69. 0. 7 | L | 2.27 | 15,3 |
| | 18 | | 2 | | 67. 58. 43 | CE | by R. | 15,1 |
| | 20 | 20. 9. 5 | 2 | 331. 18. 1 | 73.13.59+: | U | 0.35– | 13,4 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Cor. — |
|---|---|---|---|---|---|---|---|---|
| 1751 | | H. M. S. | | D. M. S. | D. M. S. | | M.S. | S. |
| May | 2 | 6. 26. 16 | 1 | 136. 51. 33 | 40. 13. 18 | U | 0.49 | 10,1 |
| | 3 | 7. 12. 21 | 1 | 149. 23. 44 | 44. 53. 45 | U | 0.57 | 11,0 |
| | 4 | 7. 56. 11 | 1 | 161. 22. 8 | 49. 45. 20 | U | 1. 8 | 11,8 |
| | 5 | 8. 38. 45 | 1 | 173. 1. 30 | 54. 36. 21 | U | 1.21 | 12,7 |
| | 14 | 15. 39. 0 | 2 | 287. 6. 53 | 71. 42. 42 | U | 2.52 | 15,7 |
| | 16 | 17. 14. 42 | 2 | 313. 12. 29 | 64. 58. 9 | U | 2. 2 | 14,5 |
| | 17 | 18. 2. 3 | 2 | 326. 3. 52 | 60. 24. 13 | U | 1.40 | 13,7 |
| | 19 | 19. 38. 29 | 2 | 352. 12. 32 | 49. 47. 4 | U | 1. 8 | 11,8 |
| | 20 | 20. 29. 27 | 2 | 5. 58. 24 | 44. 13. 51½ | U | 0.57½ | 10,8 |
| | 30 | 5. 7. 35 | 1 | 144. 43. 51 | 43. 11. 20½ | U | 0.53½ | 10,6 |
| | 31 | 5. 53. 11 | 1 | 157. 8. 59 | 48. 6. 18 | U | 1. 4 | 11,5 |
| June | 1 | 6. 36. 46 | 1 | 169. 3. 36 | 53. 2. 24 | U | 1.16 | 12,4 |
| | 4 | 8. 45. 22 | 1 | 204. 15. 14 | 66. 14. 35 | U | 2. 8 | 14,7 |
| | 6 | 10. 16. 30 | 1 | 229. 4. 22 | 72. 11. 22 | U | 2.55 | 15,8 |
| | 12 | 15. 12. 36 | 2 | 309. 12. 43 | 66. 13. 38 | U | 2. 8 | 14,7 |
| | 13 | 15. 59. 40 | 2 | 321. 59. 4 | 61. 54. 23 | U | 1.47 | 14,0 |
| | 14 | 16. 46. 22 | 2 | 334. 41. 22 | 57. 0. 34 | U | 1.28 | 13,1 |
| | 15 | 17. 33. 28 | 2 | 347. 28. 57 | 51. 44. 19 | U | 1.12 | 12,2 |
| | 17 | 19. 12. 50 | 2 | 14. 21. 54 | 41. 5. 30 | U | 0. 5 | 10,3 |
| | 18 | 20. 7. 3 | 2 | 28. 56. 31 | 36. 21. 50 | U | 0.42 | 9,4 |
| faint. | 20 | 22. 6. 26 | 2 | 60. 50. 32 | 30. 21. 47 | CE | 0.33 | 8,4 |
| | 28 | 4. 31. 37 | 1 | 164. 17. 57 | 51. 1. 6 | U | 1.10 | 12,1 |
| July | 4 | 8. 59. 40 | 1 | 237. 24. 24 | 73. 20. 42½ | U | 3. 7½ | 16,0 |
| | 5 | 9. 48. 36 | 1 | 250. 39. 47 | 74. 22. 10 | U | 3.21 | 16,2 |
| | 6 | 10. 38. 34 | 1 | 264. 10. 20 | 74. 18. 14 | U | 3.20 | 16,2 |
| | 8 | 12. 20. 54 | 2 | 291. 47. 47 | 70. 48. 52 | U | | 15,6 |
| | 11 | 14. 44. 57 | 2 | 330. 52. 26 | 58. 37. 36 | U | 1.33 | 13,4 |
| | 17 | 19. 53. 33 | 2 | 54. 8. 31 | 30. 58. 16½ | U | 0.26: | 8,5 |
| | 18 | | | | 29. 45. 15 | CE | by R. | 8,3 |
| | 19 | 21. 55. 39 | 2 | 86. 43. 12 | 29. 52. 21 | CE | by R. | 8,3 |
| | 27 | 3. 52. 58 | 1 | 183. 11. 34 | 58. 34. 5 | U | 1.33 | 13,4 |
| Aug. | 3 | 9. 21. 20 | 1 | 272. 24. 42 | 74. 8. 26 | L | 3.19 | 16,2 |
| | 5 | 11. 1. 22 | 1 | 299. 27. 28 | 68. 53. 39 | U | 2.26 | 15,2 |
| | 8 | 13. 28. 59 | | 339. 25. 17 | 55. 19. 33 | U | 1.23 | 12,8 |

N. B. July 8. Barometer was obſerved 29,81 inches, and Thermom. 61 degrees.

| Years. | Days. N. S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction used. | Cor. — | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1751 | | H.M.S. | | D. M. S. | D. M. S. | | M.S. | S. | | |
| Aug. | 11 | 15.57.52 | 2 | 19.42. 4 | 39.34.44 | U | 0.47 | 10,0 | | |
| | 13 | 17.47.48 | 2 | 49.13.41 | 31.57. 8:: | U | 0.36 | 8,7 | | |
| | 14 | 18.46.20 | 2 | 64.53.15 | 29.58. 9 | U | 0.33 | 8,3 | | |
| | 16 | 20.45. 8 | 2 | 96.38.20 | 30.36. 1 | U | by R. | 8,4 | | |
| | 26 | 4. 0.27 | 1 | 214.38.17 | 68.40.45 | U | 2.26 | 15,2 | | |
| | 30 | 7.12.24 | 1 | 266.42. 7 | 73.52.14 | U | 3.16 | 16,1 | | |
| Sep. | 2: | 9.41. 7 | 1 | 306.56.22 | 67.18.20 | L | by R. | 14,9 | | |
| | 3 | 10.30. 3 | 1 | 320.11.32 | 63. 2.38 | L | by R. | 14,2 | | |
| | 5 | 12. 9.10 | C | 347. 0.30 | 52.11.18 | U | 1.13 | 12,2 | | |
| | 6 | 13. 0.30 | 2 | 0.51.54 | 46.42.11 | U | 1. 1 | 11,3 | | |
| | 7 | 13.52.26 | 2 | 14.52. 7 | 41.26.38 | U | 0.49 | 10,3 | | |
| | 8 | 14.46.35 | 2 | 29.25.44 | 36.46.51 | U | 0.45 | 9,6 | 29,96 | 51 |
| | 13 | 19.36.34 | 2 | 107. 2.54 | 32.52.15 | L | 0.37 | 8,8 | | |
| | 14 | 20.30.40 | 2:: | 121.35.52 | 35.49.33 | CE | by R. | 9,4 | | |
| | 29 | 7.30.36 | 1 | 300.50. 0 | 68.43.14½ | L | 2.23½ | 15,2 | 29,69 | 56½ |
| Oct. | 1 | 9. 7.10 | 1 | 327. 0.47 | 60.24.24 | L | 1.37 | 13,7 | | |
| | 2 | 9.56. 2 | 1 | 340.14.45 | 55.17.30 | L | 1.22 | 12,8 | | |
| | 3 | 10.46. 6 | 1 | 353.47. 9 | 49.51. 2 | L | 1. 8 | 11,9 | 29,94 | 49½ |
| | 7 | 14.32.22 | 2 | 54.26.57 | 31.35. 9 | U | 0.36 | 8,6 | 29,85 | 51 |
| | 10 | 17.32.10 | 2 | 102.28.45 | 32.22. 0 | L | 0.36 | 8,7 | | |
| | 11 | 18.27.21 | 2 | 117.17.49 | 35.13.43 | L | 0.41 | 9,2 | | |
| | 13 | 20. 7.46 | 2 | 144.26.23 | 43.27.33 | L | 0.55 | 10,7 | | |
| | 14 | 20.54. 7 | 2 | 157. 2.45 | 48.14.20: | L | 1. 4 | 11,5 | | |
| | 24 | 3.47. 2 | 1 | 269.25.45 | | L | | 16,1 | | |
| | 25 | 4.35.53 | 1 | 282.29. 2 | 72.15. 1 | L | 3. 1 | 15,8 | | |
| | 26 | 5.22.47 | 1 | 295.24. 5 | 69.48.49 | L | 2.37,2 | 15,4 | 29,88 | 45,5 |
| | 28 | 6.57.50 | 1 | 320.54.59 | 62.24.41 | L | 1.52,7 | 14,1 | 30,14 | 42,5 |
| | 29 | 7.45. 8 | 1 | 333.43.32 | 57.41.38 | L | 1.34 | 13,3 | mean. | |
| | 30 | 8.32. 7 | 1 | 346.48.24 | 52.31.54 | L | 1.17,2 | 12,3 | 30,22 | 43,3 |
| | 31 | 9.22.20 | 1 | 0.22.50 | 47.10. 3 | L | 1. 2,8 | 11,4 | 30, 2 | 46,0 |
| Nov. | 1 | 10.15.23 | 1 | 14.40. 3 | 41.55.40 | L | 0.52,4 | 10,4 | 30, 2 | 45,5 |
| | 2: | 11.11.55 | 1 | 29.49.28 | 36.56.41 | C | 0.44,4 | 9,6 | 29,97 | 40,5 |
| | 3 | 12.14.24 | 2 | 46.28.30 | 32.57.48 | U | 0.37 7 | 8,9 | 29,76 | 43,2 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Cor. 1 | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1752 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | | |
| May | 19 | 5. 34. 36 | 1 | 141.24.26 | 42.21.11,2 | U | 0.51,1 | 10,4 | 29,60 | 56,0 |
| | 22 | 7. 57. 29 | 1 | 180.11. 8 | 56.44.19,5 | U | 1.26,8 | 13,1 | 30,10 | 56 |
| | 23 | 8.43. 8 | 1 | 192.36.51 | 61. 9.38,0 | U | 1.43,4 | 13,8 | 30,05 | 55 |
| | 24 | 9.29. 4 | 1 | 205. 6.45 | 65. 4.47,5 | U | 2. 1,8 | 14,6 | 29,98 | 56 |
| | 25 | 10. 15. 42 | 1 | 217.47.31 | 68.20. 4½ | U | 2.22,6 | 15,1 | 29,97 | 55 |
| | 27 | 11. 52. 32 | C | 244. 2.10 | 72.19. 2½ | U | 2.59,2 | 15,8 | 29,94 | 50 |
| | 29 | 13. 30. 26 | 2 | 270.33. 0 | 72.25.17½ | U | 2.59,3 | 15,8 | 29,95 | 52,5 |
| June | 1 | 15. 49. 43 | 2 | 308.25.17 | 65.41.13 | U | 2. 3,1 | 14,7 | 29,38 | 55 |
| | 3 | 17. 18. 21 | 2 | 332.36.47 | 57.48.18— | U | 1.29,7 | 13,3 | 29,72 | 54 |
| | 14 | 2. 29. 44 | 1 | 120.41.35 | 36.29.19 | CE | 0.42,0 | 9,5 | mean. | |
| | 15 | 3. 25. 54 | 1 | 135.45.21 | 40.26.53+ | U | 0.47,4 | 10,1 | 29,91 | 63,5 |
| | 16 | 4. 18. 21 | 1 | 149.53.36 | 45.14. 0½ | U | 0.57,0 | 11,0 | mean. | |
| | 17 | | | | 50.13.51 | U | 1. 8,0 | 11,6 | mean. | |
| | 18 | 5. 55. 12 | 1 | 176. 8.27 | 55. 8.10½ | U | 1.20,6 | 12,8 | 30,14 | 62 |
| | 19 | 6. 41. 28 | 1 | 188.43.32 | 59.44.23— | U | 1.37,0 | 13,6 | mean. | |
| | 22 | 9. 0. 44 | 1 | 226.35.38 | 70. 3.29 | U | 2.32,9 | 15,4 | 30,00 | 63 |
| | 23 | 9. 48. 28 | 1 | 239.32.41 | 71.54. 5½ | U | 2.50,3 | 15,8 | 30,05 | 63½ |
| | 25 | 11. 25. 2 | 1 | 265.43.40 | 72.41.49 | U | 2.57,2 | 15,9 | 29,95 | 64 |
| | 29 | 14. 32. 33 | 2 | 316.40.30 | 63.21.46 | U | 1.50,2 | 14,2 | 29,45 | 58½ |
| July | 2 | 16. 44. 54 | 2 | 352.48.34 | 50.19.31 | U | 1. 7,5 | 11,9 | 29,75 | 58 |
| | 5 | 19. 10. 53 | 2 : | 32.21.42 | 37. 5.45: | U | 0.41,8 | 9,6 | 29,45 | 60 |
| | 8 | 22. 8. 11 | 2:: | 79.46. 1 | 31.12.51 + | CE | 0.33,3 | 8,5 | 29,52 | 63 |
| | 20 | 7. 45. 24 | 1 | 235.18.21 | 71.15.24 | U | 2.47,5 | 15,4 | mean. | |
| | 22 | 9. 21. 42 | 1 | 261.25.15 | 72.45.15 | U | 3. 0,0 | 15,5 | 29,92 | 61 |
| | 23 | 10. 9. 43 | 1 | 274.26.41 | 72. 2. 9 | U | 2.52,0 | 15,4 | 29,9[illegible] | 60,5 |
| | 26 | 12. 31. 3 | 2 | 312.49.45 | 64.36.49 | U | 1.58,1 | 14,2 | 29,83 | 58 |
| | 27 | 13. 15. 37 | 2 | 324.59.18 | 60.46. 8½ | U | 1.40,6 | 13,7 | 29,97 | 58,5 |
| | 28 | 13. 59. 46 | 2 | 337. 2.26 | 56.29. 4+ | U | 1.25,4 | 12,8 | 30,10 | 59 |
| | 29 | 14. 44. 4 | 2 | 349. 7.49 | 51.55.54½ | U | 1.12,5 | 12,0 | 30,01 | 56 |
| Aug. | 4 | 19. 52. 46 | 2 | 72.25.52 | 31.12.43½ | U | 0.33,3 | 8,4 | 29,33 | 61 |
| | 16 | 5. 40. 15 | 1 | 230.32.55 | 70.19.11½ | U | 2.38,0 | 15,2 | mean. | |
| | 19 | 8. 5. 6 | 1 | 269.48.51 | 72.13.44 | U | 2.57,0 | 15,6 | mean. | |
| | 23 | 11. 10. 39 | 1 | 320.16.15 | 62.10.16 | U | 1.46,6 | 13,8 | 29,71 | 55 |
| | 25 | 12. 42. 21 | 2 | 345.13.54 | 53.32. 2 | U | 1.15,6 | 12,2 | 29,65 | 57,6 |

| Years. | Days, N. S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Observed Right Ascension of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction used. | Cor. — | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1752 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | | |
| Aug. | 28 | 15. 3.20 | 2 | 23.31.46 | 40. 2.26 | U | 0.47,6 | 10,0 | 29,97 | 57 |
| | 30 | 16.48.38 | 2 | 51.53.55 | 33.29.11 | U | 0 40,3 | 8,8 | 29,83 | 58,7 |
| | 31 | 17.45.17 | 2 | 67. 5.10 | 31.44.54½ | U | 0.35,0 | 8,4 | 29,89 | 56,5 |
| Sept. | 1 | 18.43.47 | 2 | 82.44.11 | 31.20.30 | U | 0.33,7 | 8,4 | 29,55 | 60,5 |
| | 2 | 19.42.56 | 2 | 98.33. 0 | 32.21.54½ | U | 0.36,0 | 8,6 | mean. | |
| | 12 | 3.32. 3 | 1 | 225. 0.55 | 69. 7. 5½ | U | 2.28,0 | 15,0 | mean. | |
| | 16 | 6.46.25 | 1 | 277.41.23 | 71.50. 0 | L | 2.54,0 | 15,6 | mean. | |
| | 17 | 7.33.23 | 1 | 290.27. 3 | 70. 1.32 | L | 2.35,0 | 15,2 | mean. | |
| | 19 | 9. 4.54 | 1 | 315.21.45 | 64. 4.35 | L | 1.57,0 | 14,2 | mean. | |
| | 22 | 11.20.47 | 1 | 352.22 54 | 50.40.45½ | U | 1. 9,4 | 12,0 | 29,95 | 55 |
| | 24 | 12.59 3 | 2 | 18.59.18 | 41.34. 8,5 | U | 0.49,4 | 10,2 | 29,69 | 59,5 |
| | 25 | 13.50.30 | 2 | 32.52.19 | 37.36.12 | U | 0.44,0 | 9,5 | 29,90 | 57,2 |
| | 27 | 15.40.56 | 2 | 62.31.41 | 32.20. 9 | U | 0.36,3 | 8,6 | 30,17 | 55 |
| | 29 | 17.37.16½ | 2 | 93.39.27 | 32.22.22 | C | 0.35,8 | 8,6 | 30,01 | 59 |
| | 30 | 18.34.49 | 2 | 109. 4 28 | 34.34.12 | L | 0.40,0 | 9,0 | 30, 12 | 48,5 |
| Oct. | 12 | 3.50.33 | 1 | 259.13.50 | 72.10. 0,5 | U | 2.54,1 | 15,6 | 29,95 | 58,5 |
| | 13 | 4.38.56 | 1 | 272.20.45 | 72. 8.49 | L | 2.56,0 | 15,6 | mean. | |
| | 16 | 6.57.41 | 1 | 310. 5. 6 | 65.25.46 | L | 2. 4.0 | 14, 1 | mean. | |
| | 17 | 7.42 20 | 1 | 322.15.42 | 61.48.26½ | L | 1.47,3 | 13,8 | 30,12 | 51,5 |
| | 18 | 8.26.55 | 1 | 334.25.24 | 57.41.21+ | L | 1.31,5 | 13,0 | 30,16 | 50 |
| | 20 | 9.58.39 | 1 | 359.23.34 | 48.34.56½ | L | 1. 5,0 | 11,4 | mean. | |
| | 21 | 10 47 15 | 1 | 12.33.44 | 43.59.57 | L | 0.55,8 | 10,7 | 29,96 | 48 |
| | 23 | 12.35.13 | 2 | 41.35.56 | 35.37.39 | U | 0.41,9 | 9,2 | 30,02 | 45 |
| | 24 | 13.32.26 | 2 | 56.55.38 | 33. 2.45½ | U | 0.37,8 | 8,8 | 29,96 | 46 |
| | 25 | 14.31.37 | 2 | 72.44.50 | 31.44.43 | U | 0.35,8 | 8,4 | 30,07 | 49,2 |
| | 27 | 16.30. 9 | 2 | 104.26. 8 | 33.58. 9 | L | 0.39,5 | 9,0 | 30,14 | 45,6 |
| | 28 | 17 26.51 | 2 | 119.38. 2 | 36.45. 2 | L | 0.43,4 | 9,3 | 30,05 | 48 |
| | 29 | 18.20.58 | 2 | 134.11.10 | 40.29.45 | L | 0.50,1 | 10,0 | 30,28 | 47 |
| | 30 | 19.12.38 | 2 | 148. 7.17 | 44.53.52 | L | 0.59,1 | 11,0 | 30,37 | 43,5 |
| | 31 | 20. 2.24 | 2 | 161.35. 9 | 49.39.44 | L | 1. 9,2 | 11,6 | 30,21 | 45 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Cor. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1752 | | H.M.S. | | D. M. S. | D. M. S. | | M.S. | | | |
| Nov. | 11 | 4. 6. 4 | 1 | 292.41.22 | 69 11.34:: | C E | 2.28,0 | 15,1 | mean. | |
| | 13 | 5.35.37 | 1 | 317. 6.37 | 63.22. 6 | L | 1.54,0 | 14,0 | mean | |
| | 14 | 6.19.22 | 1 | 329. 3.48 | 59.30.57½ | L | 1.38,8 | 13,2 | 30,31 | 50 |
| | 15 | 7. 3.17 | 1 | 341. 3.27 | 55.16.20+ | L | 1.24,5 | 12,6 | 30,37 | 48,5 |
| | 16 | 7.48.11 | 1 | 353 17.53 | 50 46.49 | L | 1.11,5 | 12,0 | 30,16 | 47 |
| | 19 | 10.17.21 | 1 | 33.38.50 | 37.51.19+ | L | 0.45,5 | 9,5 | 29,73 | 40 |
| | 20 | 11.13.57 | 1 | 48.49.18 | 34.42.37 | L | 0.41,0 | 9,0 | 29,93 | 39,5 |
| | 21 | 12.16.11 | 2 | 65.24.30 | 32.43.53 | L | 0.38,2 | 8,6 | 30,00 | 38,0 |
| | 25 | 16.15.59 | 2 | 129.27.59 | 39. 9.29 | L | 0.48,1 | 9,8 | 30,15 | 42,4 |
| | 26 | 17. 9.32 | 2 | 143.52.35 | 43.27.49 | L | 0.57,0 | 10,5 | 30,37 | 39 |
| | 29 | 19.36.54 | 2 | 183.46.25 | 57.43.28 | L | 1.34,8 | 13,0 | 30,27 | 38 |
| | 30 | 20.24.18 | 2 | 196.38.30 | 62. 3.38 | L | 1.53,8 | 13,8 | 30,37 | 36 |
| Dec. | 12 | 4.57.54 | 1 | 336.14 22 | 57. 7.24 | L | 1.26,8 | 13,0 | 29,00 | 47 |
| | 13 | 5.41.13 | 1 | 348. 4 58 | 52.48.57 | L | 1.15,0 | 12,2 | mean. | |
| | 14 | 6.25.42 | 1 | 0.13. 6 | 47.22.38 | L | 1. 1,1 | 11,2 | 29,22 | 49,5 |
| | 16 | 8. 1.57 | 1 | 26.19. 3 | 39.51.53 | L | 0.49,1 | 10,0 | 29.74 | 39 |
| | 17 | | | | 36 18.33— | L | 0.42,0 | 9,3 | 29,58 | 48,5 |
| | 19 | 10.53.54 | 1 | 72.22.51 | 32.17.57— | L | 0.36,5 | 8,6 | 29,55 | 44 |
| | 20 | 11.58. 4 | C. | 89.27. 9 | 32.10.38 | C. | 0.36,0 | 8,6 | 29,37 | 44,5 |
| | 21 | 13. 2. 2 | 2 | 106.28.22 | 34.12. 7+ | L | 0.39,3 | 9,0 | 29,30 | 39,5 |
| | 22 | 14. 2.38 | 2 | 122.38.56 | 37.29.55½ | L | 0.45,3 | 9,5 | 29,68 | 34 |
| | 23 | 15. 0. 0 | 2 | 138. 0.56 | 41.29.16+ | L | 0.50,3 | 10,2 | 29,17 | 44,2 |
| | 26 | 17.34.29 | 2 | 179.41.55 | 56. 6. 1 | L | 1.25,7 | 12,8 | 29,21 | 39,5 |
| | 27 | 18.22.34 | 2 | 192.44.21 | 60.37.59½ | L | 1 46,1 | 13,6 | 29,83 | 33,5 |
| 1753 Jan. | 17 | 10.36.27 | 1 | 96.35.20 | 33. 4.21 | L | 0.38,9 | 9,0 | 29,90 | 35,0 |
| | 23 | 16.16.25 | 2 | 187.43.40 | 58.40.51 | L | 1.39,3 | 13,0 | 30,17 | 33,5 |
| | 26 | 18.43.31 | 2 | 227.33.41 | 69.29.34 | L | 2.40,6 | 15,0 | 29,85 | 30,0 |
| Feb. | 9 | 4.38.17 | 1 | 29.28.30 | 39.30. 3+ | L | 0.47,0 | 10,0 | mean. | |
| | 15 | 10.18.32 | 1 | 120.40.55 | 36.43.54 | C. | 0.42,5 | 9,5 | 29,38 | 47 |
| | 16 | 11.17. 8 | 1 | 136.21.20 | 41. 1.41 — | L | 0.49,2 | 10,2 | 29,40 | 50 |
| | 21 | 15.45.51 | 2 | 208.38.59 | 64.56.18½ | L | 2. 6,2 | 14,4 | 29,98 | 39,5 |
| | 25 | 19. 5. 0 | 2 | 262.30.56 | 72.14.20½ | L | 3. 5,5 | 15,5 | 30,28 | 39 |

| Years. | Dys, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Obſerved Right Aſcenſion of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Cor. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1752 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | | |
| Aug. | 28 | 15. 3.20 | 2 | 23.31.46 | 40. 2.26 | U | 0.47,6 | 10,0 | 29,97 | 57 |
| | 30 | 16.48.38 | 2 | 51.53.55 | 33.29.11 | U | 0 40,3 | 8,8 | 29,83 | 58,7 |
| | 31 | 17.45.17 | 2 | 67. 5.10 | 31.44.54½ | U | 0.35,0 | 8,4 | 29,89 | 56,5 |
| Sept. | 1 | 18.43.47 | 2 | 82.44.11 | 31.20.30 | U | 0.33,7 | 8,4 | 29,55 | 60,5 |
| | 2 | 19.42.56 | 2 | 98.33. 0 | 32.21.54½ | U | 0.36,0 | 8,6 | mean. | |
| | 12 | 3.32. 3 | 1 | 225. 0.55 | 69. 7. 5½ | U | 2.28,0 | 15,0 | mean. | |
| | 16 | 6.46.25 | 1 | 277.41.23 | 71.50. 0 | L | 2.54,0 | 15,6 | mean. | |
| | 17 | 7.33.23 | 1 | 290.27. 3 | 70. 1.32 | L | 2.35,0 | 15,2 | mean. | |
| | 19 | 9. 4.54 | 1 | 315.21.45 | 64. 4.35 | L | 1.57,0 | 14,2 | mean. | |
| | 22 | 11.20.47 | 1 | 352.22 54 | 50.40.45½ | U | 1. 9,4 | 12,0 | 29,95 | 55 |
| | 24 | 12.59. 3 | 2 | 18.59.18 | 41.34. 8,5 | U | 0.49,4 | 10,2 | 29,69 | 59,5 |
| | 25 | 13.50.30 | 2 | 32.52.19 | 37.36.12 | U | 0.44,0 | 9,5 | 29,90 | 57,2 |
| | 27 | 15.40.56 | 2 | 62.31.41 | 32.20. 9 | U | 0.36,3 | 8,6 | 30,17 | 55 |
| | 29 | 17.37.16½ | 2 | 93.39.27 | 32.22.22 | C | 0.35,8 | 8,6 | 30,01 | 59 |
| | 30 | 18.34.49 | 2 | 109. 4 28 | 34.34.12 | L | 0.40,0 | 9,0 | 30,12 | 48,5 |
| Oct. | 12 | 3 50.33 | 1 | 259.13.50 | 72.10. ,0,5 | U | 2.54,1 | 15,6 | 29,95 | 58,5 |
| | 13 | 4.38.56 | 1 | 272.20.45 | 72. 8.49 | L | 2.56,0 | 15,6 | mean. | |
| | 16 | 6.57.41 | 1 | 310. 5. 6 | 65.25.46 | L | 2. 4.0 | 14,1 | mean. | |
| | 17 | 7 42 20 | 1 | 322.15.42 | 61.48.26½ | L | 1.47,3 | 13,8 | 30,12 | 51,5 |
| | 18 | 8.26.55 | 1 | 334.25.24 | 57.41.21+ | L | 1.31,8 | 13,0 | 30,16 | 50 |
| | 20 | 9.58.39 | 1 | 359.23.34 | 48.34.56½ | L | 1. 5,0 | 11,4 | mean. | |
| | 21 | 10 47 15 | 1 | 12.33.44 | 43.59.57 | L | 0.55,8 | 10,7 | 29,96 | 48 |
| | 23 | 12.35.13 | 2 | 41.35.56 | 35.37.39 | U | 0.41,9 | 9,2 | 30,02 | 45 |
| | 24 | 13.32.26 | 2 | 56.55.38 | 33. 2.45½ | U | 0.37,8 | 8,8 | 29,96 | 46 |
| | 25 | 14.31.37 | 2 | 72.44.50 | 31.44.43 | U | 0.35,8 | 8,4 | 30,07 | 49,2 |
| | 27 | 16.30. 9 | 2 | 104.26. 8 | 33.58. 9 | L | 0.39,5 | 9,0 | 30,14 | 45,6 |
| | 28 | 17 26.51 | 2 | 119.38. 2 | 36.45. 2 | L | 0.43,4 | 9,3 | 30,05 | 48 |
| | 29 | 18.20.58 | 2 | 134.11.10 | 40.29.45 | L | 0.50,1 | 10,0 | 30,28 | 47 |
| | 30 | 19.12.38 | 2 | 148. 7.17 | 44.53.52 | L | 0.59,1 | 11,0 | 30,37 | 43,5 |
| | 31 | 20. 2.24 | 2 | 161.35. 9 | 49.39.44 | L | 1. 9,2 | 11,6 | 30,21 | 45 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refract. + | Cor. − | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1753 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. | | |
| June | 4 | 2.43.24 | 1 | 114. 1.16 | 35.18.39 | U | 0.39,0 | 9,0 | 29,96 | 69,5 |
| | 7 | 5.27.55 | 1 | 158.13.17 | 47.31.55½ | U | 1. 0,7 | 11,2 | 30,00 | 65 |
| | 8 | 6.18.35 | 1 | 171.54.27 | 52.22.18½ | U | 1.11,6 | 12,0 | 29,97 | 67,2 |
| | 9 | 7. 8.14 | 1 | 185.20.34 | 57. 5.18½ | U | 1.26,4 | 13,0 | 30,00 | 72 |
| | 10 | 7.57.38 | 1 | 198.42.40 | 61.26. 8— | U | 1.41,5 | 13,7 | 29,98 | 66,2 |
| | 11 | 8.47.18 | 1 | 212. 8.45 | 65.12. 2 | U | 2. 0,3 | 14,4 | 29,94 | 63 |
| | 12 | 9.37.30 | 1 | 225 42.56 | 68.12. 1 | U | 2.18,6 | 15,0 | 29,87 | 62,5 |
| | 18 | 14.34. 9 | 2 | 305.59 41 | 66.11.47½ | U | 2. 8,6 | 14,5 | 30,10 | 56,5 |
| | 19 | 15.18.26 | 2 | 318. 5. 2 | 63. 2.54— | U | 1.50,5 | 14,0 | 29,98 | 59,5 |
| | 21 | 16.44. 2 | 2 | 341.30.41 | 55.29.59½ | U | 1.22,0 | 12,5 | 29,76 | 56 |
| | 23 | 18.10.12 | 2 | 5. 5. 7 | 47.11.23½ | U | 1. 1,0 | 11,2 | 29,66 | 53 |
| | 24 | 18.55.33 | 2 | 17.26.25 | 43. 6.31 | U | 0.53,0 | 10,5 | 29,69 | 54 |
| | 26 | 20.34.58 | 2 | 44.19.56 | 36. 5. 7+ | U | 0.40,6 | 9,3 | 29,85 | 61,5 |
| July | 2 | 1.28. 5 | 1 | 122.44.23 | 37.14.13+ | C E | 0.43,0 | 9,5 | mean. | |
| | 5 | 4.14. 8 | 1 | 167.19.17 | 50.31.32 | U | 1. 6,1 | 11,8 | 29,73 | 70 |
| | 6 | 5. 5.18 | 1 | 181. 8. 4 | 55.24.44 | U | 1.19,1 | 12,6 | 29,95 | 71,5 |
| | 7 | 5.55.26 | 1 | 194.41.23 | 59.57.51 | U | 1.32,3 | 13,5 | 29,72 | 77,5 |
| | 8 | 6.45.13 | 1 | 208. 9.12 | 63.57.30 | U | 1.51,4 | 14,0 | 29,84 | 70,5 |
| | 9 | 7.35. 3 | 1 | 221.37.53 | 67 13.15 | U | 2.10,4 | 14,7 | 29,83 | 67,5 |
| | 10 | 8.25. 9 | 1 | 235.10.38 | 69.36.48 | U | 2.32,0 | 15,0 | mean. | |
| | 12 | 10. 5.17 | 1 | 262.15. 4 | 71.29.10— | U | 2.45,0 | 15,5 | 29,66 | 60,2 |
| | 13 | 10.54.28 | 1 | 275.33.54 | 70.56.39— | U | 2.56,1 | 15,5 | 29,88 | 61,5 |
| | 15 | 12.30.59 | 2 | 301 43.52 | 67.14.14½ | U | 2.11,8 | 14,7 | 29,45 | 58 |
| | 17 | 13.59.23 | 2 | 325.51.55 | 60.53. 9+ | U | 1.40,6 | 13,7 | 29,81 | 58 |
| | 19 | 15.24.18 | 2 | 349. 7.16 | 53. 2.56½ | U | 1.16,6 | 12,3 | 29,77 | 59 |
| | 23 | 18.24.53 | 2 | 38 20.10 | 37.36.38: | U | 0.43,8 | 9,5 | 30,13 | 57 |
| | 25 | 20.11.55 | 2 | 67. 8.12 | 33. 1.21½ | U | 0.36,5 | 8,8 | 29,93 | 59 |
| | 26 | 21.10.17 | 2 | 82.45.21 | 32.39.55: | C E | 0.37,0 | 8,6 | mean. | |
| Aug. | 9 | 8.51.44 | 1 | 271.24.44 | 71. 4.32 | U | 2.40,4 | | 29,54 | 60,5 |
| | 11 | 10.26.34 | 1 | 297. 9.24 | 68.29.41 | L | 2.22,0 | | 29,74 | 57 |
| | 16 | 14. 6. 1 | 2 | 357. 5.41 | 50.25. 5½ | U | 1. 7,4 | | 29,42 | 55,5 |
| | 18 | 15.33.48 | 2 | 21. 4.20 | 42.29.14½ | U | 0.52,0 | | mean. | |
| | 19 | 16.20.24 | 2 | 33.44.21 | 38.58.19½ | U | 0.46,7 | | 30,07 | 50 |
| | 20 | 17. 9.36 | 2 | 47. 3.28 | 36. 1.16+ | U | 0.41,0 | | mean. | |

N, B. On Aug. 9. the New Quadrant began to be uſed to the ſouth, and its line of collimation and total arc were then without ſenſible error.

| Years. | Days. N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refract. + | Cor. − | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1753 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | | |
| Mar. | 8 | 2 36.34 | I | 25.34.26 | 40.47. 1 | L | 0.51,0 | 10,2 | 30,31 | 44,2 |
| | 9 | 3 26.6½ | I | 38.58.43 | 37.23. 4— | L | 0.43,7 | 9,5 | mean. | |
| | 10 | 4.18.14 | I | 53. 1.50 | 34 45.20 | L | 0.40,8 | 9,0 | 30,11 | 43,2 |
| | 12 | 6. 9.32 | I | 82.54.12 | 32.42.20 | L | 0.36,6 | 8,8 | 29,42 | 47 |
| | 13 | 7. 6.23 | I | 98.22.24 | 33. 2.33 | U | 0.37,7 | 8,7 | 29,80 | 45,5 |
| | 15 | 9. 2.14 | I | 129. 9. 7 | 38.36.25½ | U | 0.46,0 | 9,8 | 29,64 | 46 |
| | 18 | 11.45.35 | I | 173. 3.32 | 52.52.58 | U | 1.17,1 | 12,3 | 29,82 | 42,5 |
| | 19 | 12.40.16 | 2 | 187.45.15 | 58.23. 3½ | L | 1.34,7 | 13,0 | 30,04 | 45,5 |
| | 21 | 14.24. 6 | 2 | 215 30.12 | 66.35.27 | L | 2.15,5 | 14,5 | 29,90 | 40,5 |
| | 24 | 16.57.12 | 2 | 257. 5.25: | 72. 1.35: | L | 2.55,0 | 15,5 | mean. | |
| | 26 | 18.34.22 | 2 | 283.25.12 | 70. 9.57 | U | 2.41,2 | 15,2 | 29,85 | 42,5 |
| Apr. | 11 | 6.55.18 | I | 123.56.44 | 37.26.56½ | U | 0.44,6 | 9,5 | 29,60 | 43 |
| | 15 | 10.26.14 | I | 180.45.57 | 55.38. 3 | U | 1.24,3 | 13,0 | 29,53 | 43,5 |
| | 17 | 12.10.14 | C | 208.48.26 | 64.36.49 | C | 2. 0,0 | 14,0 | 29,32 | 45 |
| | 19 | 13.55. 9 | 2 | 237. 4.54 | 70.27.55— | L | 2.40,0 | 15,0 | mean. | |
| | 21 | 15.37.19 | 2 | 264.39.52 | 71.26.37½ | U | 2.49,0 | 15,3 | 30,00 | 54 |
| | 22 | 16.26 30 | 2 | 277.58.47 | 70.40.43½ | U | 2.42,4 | 15,4 | 29,90 | 51,5 |
| | 23 | 17.14. 1 | 2 | 290.52.32 | 69. 1.36½ | U | 2.29,5 | 15,0 | 29,80 | 48 |
| | 26 | 19.27.54 | 2 | 327.23.43 | 59.59.35 | U | 1.37,7 | 13,5 | 29,40 | 50 |
| May | 6 | 2.56.15 | I | 88.39.31 | 32.28.53 | U | 0.36,8 | 8,5 | 30,23 | 51,5 |
| | 7 | 3.54.29 | I | 104.14.40 | 33.51.54— | U | 0.38,7 | 9,0 | 30,05 | 50 |
| | 9 | 5.46.16 | I | 134.14.18 | 40. 4.11½ | U | 0.47,6 | 10,0 | 30,04 | 58,5 |
| | 10 | 6.39. 8 | I | 148.28.42 | 44.22.40 | U | 0.54,6 | 10,7 | 29,90 | 62 |
| | 11 | 7.30.24 | I | 162.18.55 | 49. 5.20 | U | 1. 5,1 | 11,5 | 29,59 | 53 |
| | 12 | 8.20 40 | I | 175.54 17 | 53.54.56 | U | 1.17,5 | 12,5 | 29,57 | 52 |
| | 14 | 10. 0.52 | I | 202.59.22 | 62.48.13½ | U | 1.50,6 | 14,0 | 29,60 | 49,5 |
| | 15 | 10.51.39 | I | 216.42.21 | 66.22.28½ | U | 2.21,7 | 14,5 | 29,30 | 47 |
| | 16 | 11.43. 0 | I | 230.33.47 | 69. 5.30— | U | 2.28,3 | 15,0 | 29,40 | 47 |
| | 22 | 16.38.42 | 2 | 310.36.27 | 64.55.36 | U | 2. 4,6 | 14,4 | 30,31 | 48,5 |
| | 23 | 17.22.29 | 2 | 322.34. 0 | 61.33.56½ | U | 1.47,5 | 13,7 | 30,32 | 49,5 |
| | 24 | 18. 5.27 | 2 | 334.19.33 | 57.47. 6 | U | 1 31,3 | 13,0 | 30,19 | 53 |
| | 25 | 18 48.20 | 2 | 346. 3.43 | 53.42.45— | U | 1.17,6 | 12,4 | 30,03 | 54,5 |
| | 26 | 19.31.57 | 2 | 357.58.43 | 49.28.52 | U | 1. 5,7 | 11,5 | 29,87 | 59,5 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refract. + | Cor. — | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1753 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. | | |
| June | 4 | 2.43.24 | 1 | 114. 1.16 | 35.18.39 | U | 0.39,0 | 9,0 | 29,96 | 69,5 |
| | 7 | 5.27.55 | 1 | 158.13.17 | 47.31.55½ | U | 1. 0,7 | 11,2 | 30,00 | 65 |
| | 8 | 6.18.35 | 1 | 171.54.27 | 52.22.18½ | U | 1.11,6 | 12,0 | 29,97 | 67,2 |
| | 9 | 7. 8.14 | 1 | 185.20.34 | 57. 5.18½ | U | 1.26,4 | 13,0 | 30,00 | 72 |
| | 10 | 7.57.38 | 1 | 198.42.40 | 61.26. 8— | U | 1.41,5 | 13,7 | 29,98 | 66,2 |
| | 11 | 8.47.18 | 1 | 212. 8.45 | 65.12. 2 | U | 2. 0,3 | 14,4 | 29,94 | 63 |
| | 12 | 9.37.30 | 1 | 225 42.56 | 68.12. 1 | U | 2.18,6 | 15,0 | 29,87 | 62,5 |
| | 18 | 14.34. 9 | 2 | 305.59 41 | 66.11.47½ | U | 2. 8,6 | 14,5 | 30,10 | 56,5 |
| | 19 | 15.18.26 | 2 | 318. 5. 2 | 63. 2.54— | U | 1.50,5 | 14,0 | 29,98 | 59,5 |
| | 21 | 16.44. 2 | 2 | 341.30.41 | 55.29.59½ | U | 1.22,c | 12,5 | 29,76 | 56 |
| | 23 | 18.10.12 | 2 | 5. 5. 7 | 47.11.23½ | U | 1. 1,0 | 11,2 | 29,66 | 53 |
| | 24 | 18.55.33 | 2 | 17.26.25 | 43. 6.31 | U | 0.53,0 | 10,5 | 29,69 | 54 |
| | 26 | 20.34.58 | 2 | 44.19.56 | 36. 5. 7+ | U | 0.40,6 | 9,3 | 29,85 | 61,5 |
| July | 2 | 1.28. 5 | 1 | 122.44.23 | 37.14.13+ | CE | 0.43,0 | 9,5 | mean. | |
| | 5 | 4.14. 8 | 1 | 167.19.17 | 50.31.32 | U | 1. 6,1 | 11,8 | 29,73 | 70 |
| | 6 | 5. 5.18 | 1 | 181. 8. 4 | 55.24.44 | U | 1.19,1 | 12,6 | 29,95 | 71,5 |
| | 7 | 5.55.26 | 1 | 194.41.23 | 59.57.51 | U | 1.32,3 | 13,5 | 29.72 | 77,5 |
| | 8 | 6.45.13 | 1 | 208. 9.12 | 63.57.30 | U | 1.51,4 | 14,0 | 29,84 | 70,5 |
| | 9 | 7.35. 3 | 1 | 221.37.53 | 67 13.15 | U | 2.10,4 | 14,7 | 29,83 | 67,5 |
| | 10 | 8.25. 9 | 1 | 235.10.38 | 69.36.48 | U | 2.32,0 | 15,0 | mean. | |
| | 12 | 10. 5.17 | 1 | 262.15. 4 | 71.29.10— | U | 2.45,0 | 15,5 | 29,66 | 60,2 |
| | 13 | 10.54.28 | 1 | 275.33.54 | 70.56.39— | U | 2.56,1 | 15,5 | 29,88 | 61,5 |
| | 15 | 12.30.59 | 2 | 301 43.52 | 67.14.14½ | U | 2.11,8 | 14,7 | 29,45 | 58 |
| | 17 | 13.59.23 | 2 | 325.51.55 | 60.53. 9+ | U | 1.40,6 | 13,7 | 29,81 | 58 |
| | 19 | 15.24.18 | 2 | 349. 7.16 | 53. 2.56½ | U | 1.16,6 | 12,3 | 29,77 | 59 |
| | 23 | 18.24.53 | 2 | 38 20.10 | 37.36.38: | U | 0.43,8 | 9.5 | 30,13 | 57 |
| | 25 | 20.11.55 | 2 | 67. 8.12 | 33. 1.21½ | U | 0.36,5 | 8,8 | 29,93 | 59 |
| | 26 | 21.10.17 | 2 | 82.45.21 | 32.39.55: | CE | 0.37,0 | 8,6 | mean. | |
| Aug. | 9 | 8.51.44 | 1 | 271.24.44 | 71. 4.32 | U | 2.40,4 | | 29,54 | 60,5 |
| | 11 | 10.26.34 | 1 | 297. 9.24 | 68.29.41 | L | 2.22,0 | | 29,74 | 57 |
| | 16 | 14. 6 1 | 2 | 357. 5.41 | 50.25. 5½ | U | 1. 7,4 | | 29.42 | 55,5 |
| | 18 | 15.33.48 | 2 | 21. 4.20 | 42.29.14½ | U | 0.52,0 | | mean. | |
| | 19 | 16.20.24 | 2 | 33.44.21 | 38.58.19½ | U | 0.46,7 | | 30,07 | 50 |
| | 20 | 17. 9.3( | 2 | 47. 3.28 | 36. 1.16+ | U | 0.41,0 | | mean. | |

N, B. On Aug. 9. the New Quadrant began to be uſed to the ſouth, and its line of collimation and total arc were then without ſenſible error.

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refract. + | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1753 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Aug. | 21 | 18. 1.44½ | 2 | 61. 7. 3 | 33. 51. 22+ | U | 0.38,3 | 30, 10 | 56 |
| | 24 | 20.53.59 | 2 | 107. 5. 2 | 34. 12. 11:: | U | 0.38,0 | mean. | |
| | 25 | 21.52.33 | 2 | 122. 55. 10 | 37. 12. 23 | CE | 0.43,0 | mean. | |
| Sept. | 7 | 8.23.46½ | 1 | 292. 59. 9 | 69. 5. 0— | L | 2.25,8 | 29,90 | 60,5 |
| | 10 | 10.37.16 | 1 | 329. 24. 20 | 60. 9. 57— | L | 1.37,8 | 30, 14 | 62,5 |
| | 14 | 13.32.37 | 2 | 17. 18. 23 | 43. 46. 22 | U | 0.54,0 | 30,04 | 60,5 |
| | 15 | 14.18.41 | 2 | 29. 50. 28 | 40. 8. 34½ | U | 0.46,8 | 29,81 | 63,5 |
| | 17 | 15.57.27 | 2 | 56. 34. 25 | 34. 37. 40 | U | 0.39,3 | 30,06 | 56 |
| | 18 | 16.50.27 | 2 | 70. 50. 42 | 33. 9. 15 | U | 0.37,1 | 30,02 | 56 |
| | 19 | 17.45.30 | 2 | 85. 37. 44 | 32. 46. 54 | U | 0.36,2 | 29,50 | 53,5 |
| | 20 | 18.41.56 | 2 | 100. 45. 41 | 34. 10. 22½ | L | 0.38,6 | 29,86 | 54,2 |
| | 21 | 19.38.55 | 2:: | 116. 1. 57 | 36. 0. 36 | CE | 0.41,0 | mean. | |
| Oct. | 1 | 3.48.30 | 1 | 247. 38. 8 | 70. 24. 12½: | U | 2.35,8 | 29,64 | 59,5 |
| | 2 | 4.40.16 | 1 | 261. 35. 54 | 70. 58. 24 | U | 2.41,5 | 29,64 | 57,8 |
| | 4 | 6.18.48 | 1 | 288. 16. 12 | 69. 40. 8— | L | 2.30,8 | 29,85 | 58,5 |
| | 5 | 7. 5.19 | 1 | 300. 55. 2 | 67. 31. 21 | L | 2.16,1 | 30,00 | 58,0 |
| | 6 | 7.50.14 | 1 | 313. 9. 40 | 64. 43. 31 | L | 1.59.7 | 30,03 | 57 |
| | 7 | 8.33.55 | 1 | 325. 5. 51 | 61. 24. 32½ | L | 1.43,2 | 29,92 | 58 |
| | 8 | 9.16.53½ | 1 | 336. 51. 24 | 57. 42. 6+ | L | 1.28,6 | 29,75 | 57,8 |
| | 10 | 10.43. 3 | 1 | 0. 25. 35 | 49. 39. 37 | L | 1. 5,1 | 29,28 | 57 |
| | 11 | 11.27.26 | 1 | 12. 32. 24 | 45. 38. 15½ | L | 0.56,5 | 29,34 | 58 |
| | 13 | 13. 3.46 | 2 | 38. 39. 33 | 38. 0. 5½ | U | 0.44,3 | 29,80 | 54 |
| | 14 | 13.54.14 | 2 | 52. 17. 44 | 35. 20. 7½ | U | 0.40,4 | 29,91 | 53,2 |
| | 15 | 14.46.55 | 2 | 66. 29. 16 | 33. 33. 13 | U | 0.37,7 | 29,75 | 53 |
| | 16 | 15.41.23 | 2 | 81. 7. 40 | 32. 50. 15 | U | 0.37,3 | 29,81 | 46,5 |
| | 19 | 18.27.53 | 2 | 125. 49. 20 | 38. 16. 31— | L | 0.46,1 | 29,82 | 42,5 |
| | 30 | 3.20.29 | 1 | 269. 11. 39 | 71. 6. 13 | CE | 2.45,0 | mean. | |
| | 31 | 4.10.39 | 1 | 282. 45. 23 | 70. 20. 39 | L | 2.41,4 | 29,52 | 42,2 |
| Nov. | 2 | 5.44.38 | 1 | 308. 17. 8 | 65. 55. 16— | L | 2. 8,4 | 29,55 | 44,5 |
| | 4 | 7.12. 1 | 1 | 332. 9. 55 | 59. 13. 43— | L | 1.36,7 | 30,09 | 51 |
| | 5 | 7.54.39 | 1 | 343. 50. 17 | 55. 21. 51½ | L | 1.23,8 | 29,70 | 44 |
| | 8 | 10. 6.51 | 1 | 19. 56. 7 | 43. 20. 53½ | L | 0.55,6 | 29,86 | 40 |
| | 10 | 11.46. 3½ | C | 46. 46. 37 | 36. 30. 14 | C | 0.43,4 | 29,61 | 38 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1753 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Nov. | 11 | 12.40.12 | 2 | 61. 20. 2 | 34. 3. 19+ | U | 0.38,8 | 29,20 | 40,5 |
| | 13 | 14.31.49½ | 2 | 91. 17. 19 | 33. 30. 46 | L | 0.39,2 | 29,88 | 37,5 |
| | 16 | 17.18.38 | 2 | 136. 3. 42 | 40. 42. 26½ | L | 0.50,2 | 29,39 | 37,5 |
| | 18 | 19. 3.27 | 2 | 164. 18. 40 | 49. 29. 8+ | L | 1. 8,2 | 29,29 | 36,5 |
| | 19 | 19.54.45 | 2 | 178. 9. 16 | 54. 15. 49— | L | 1.22,1 | 29,69 | 36,0 |
| | 20 | 20.46. 7 | 2 | 192. 1. 0:: | 58. 55. 3+ | L | 1.35,0 | mean. | |
| | 21 | 21.38. 5 | 2 | 206. 1. 45 | 62. 53. 41:: | CE | 1.52,0 | mean. | |
| | 29 | 3.37.28½ | 1 | 303. 1. 27 | 67. 13. 9½ | L | 2.20,7 | 29,77 | 36 |
| | 30 | 4.22.50 | 1 | 315. 22. 45 | 64. 17. 32½ | L | 2. 3,2 | 29,81 | 35,5 |
| Dec. | 2 | 5.49.10 | 1 | 338. 59. 42 | 57. 8. 43 | L | 1.32,2 | 30,20 | 39,5 |
| | 3 | 6.31.29 | 1 | 350. 35. 17 | 53. 11. 30½ | L | 1.20,1 | 30,17 | 36,8 |
| | 6 | 8.44.36½ | 1:: | 26. 55. 2 | 41. 25. 56 | L | 0.50,0 | mean. | |
| | 7 | 9.33.32 | 1 | 40. 10. 3 | 38. 7. 0 | L | 0.47,0 | 29,91 | 34 |
| | 8 | 10.25.35 | 1 | 54. 12. 2 | 35. 29. 3— | L | 0.43,3 | 30,05 | 30,8 |
| | 9 | 11.20.39 | 1 | 68. 59. 30 | 33. 47. 49 | L | 0.40,5 | 30,02 | 32 |
| | 17 | 18.43 11 | 2 | 187. 48. 45 | 57. 20. 44 | L | 1.28,5 | 29,40 | 48 |
| | 29 | 3.44.38 | 1 | 334. 23. 12 | 58. 54. 8½ | L | 1.40,0 | 30,22 | 34,8 |
| | 30 | 4.26.52 | 1 | 345. 57. 40 | 55. 2. 32½ | L | 1.26,6 | 30,12 | 31,8 |
| | 31 | 5. 8.58 | 1 | 357. 29. 55 | 51. 3. 53 | L | 1.15,5 | 30,11 | 29,5 |
| 1754 | | | | | | | | | |
| Jan. | 2 | 6.35.55 | 1 | 21. 16. 6 | 43. 17. 30+ | L | 0.56,3 | 30,00 | 36 |
| | 3 | 7.22.24 | 1 | 33. 54. 22 | 39. 48. 1+ | L | 0.49,8 | 30,00 | 36 |
| | 5 | 9. 4.36 | 1 | 61. 29. 51 | 34. 38. 10 | L | 0.40,1 | 29,44 | 39,8 |
| | 6 | 10. 0.34½ | 1 | 76. 30. 56 | 33. 27. 35 | L | 0.37,4 | 29,19 | 39 |
| | 7 | 10.58.59½ | 1 | 92. 8. 43 | 33. 31. 28 | L | 0.38,7 | 29,30 | 35,5 |
| | 8 | 11.58.33 | 1 | 108. 3. 42 | 34. 39. 48 | C | 0.40,6 | 29,31 | 33,5 |
| | 9 | 13 0.10 | 2 | 124. 29. 30 | 37. 39. 1½ | L | 0.45,6 | 29,78 | 37 |
| | 11 | 14.53.40½ | 2 | 154. 55. 10 | 45. 55. 30 | L | 1. 0,8 | 29,55 | 35,5 |
| | 17 | 20. 5.48 | 2 | 239. 4. 48 | 69. 45. 16½ | L | 2.36,0 | 29,61 | 44,5 |
| | 18 | 20.57.24½ | 2 | 253. 0. 5 | 71. 6. 24: | L | 2.45,0 | mean. | |
| | 26 | 2.24. 4 | 1 | 341. 47. 21 | 56. 26. 49 | CE | 1.26,5 | mean. | |
| | 27 | | | | 52. 45. 47 | L | 1.17,6 | 29,46 | 33,5 |
| | 30 | 5.15.44 | 1 | 28. 45. 52 | 41. 25. 54½ | L | 0.53,4 | 30,10 | 32 |
| | 31 | 6. 2.29 | 1 | 41. 28. 12 | 38. 17. 34— | L | 0.48,6 | 30,31 | 29 |

| Years. | Days. N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1754 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. | |
| Feb. | 3 | 8.40.27 | 1:: | 84. 1.34 | 33. 29. 29 | L | 0 37,5 | mean. | |
| | 4 | 9.38.26 | 1 | 99.33. 2 | 34. 7. 28 | L | 0.40,2 | 29,37 | 31 |
| | 5 | 10.37.37 | 1 | 115.22.16 | 36. 4. 51 + | L | 0.43,6 | 29,23 | 26 |
| | 6 | 11.36.46 | 1 | 131.11. 7 | 39. 16. 34 | L | 0.49,5 | 29,39 | 23,5 |
| | 13 | 18. 2.18 | 2 | 234.43.57 | 68. 52. 39½ | L | 2.31,3 | 29,81 | 40,2 |
| | 18 | 22.11.54½ | 2 | 302.13.56:: | 67. 22. 25,5 | CE | 2.27,0 | 30,41 | 30 |
| | 28 | 4.45.59 | 1 | 49.53.31 | 36. 49. 46,3 | L | 0.43,7 | 30,20 | 48 |
| Mar. | 1 | 5.35.56 | 1 | 63.24. 3 | 34. 51. 23,0 | L | 0 40,8 | 30,04 | 44 |
| | 2 | 6.28.30 | 1 | 77.33.38 | 33. 48. 10,5 | L | 0.39,2 | 30,00 | 44 |
| | 3 | 7.23.21 | 1 | 92.17.53 | 33. 50. 20 | L | 0.39,4 | 30,15 | 45 |
| | 4 | 8.19 56 | 1 | 107.28. 0 | 34. 31. 57 | U | 0.40,7 | 30,20 | 43 |
| | 5 | 9.17.25 | 1 | 122.51.49 | 36. 59. 28,5 | U | 0.44,7 | 30,20 | 41,5 |
| | 6 | 10.15. 3 | 1 | 138.17.44 | 40. 33. 52,5 | U | 0.52,7 | 30,40 | 36 |
| | 7 | 11.12.15 | 1 | 153.37.19 | 45. 0. 39 | U | 1. 0,5 | 30,18 | 34 |
| | 9 | 13. 7. 9½ | 2 | 184.23.56 | 55. 37. 0 | L | 1.28,4 | 29,77 | 28 |
| | 28 | 3.32.26 | 1 | 59. 3. 1 | 35. 29. 3:: | L | 0.40,5 | mean. | |
| | 31 | 6.10.23½ | 1 | 101.36.22 | 34. 0. 10 | U | 0 41,0 | 29,75 | 27,5 |
| Apr. | 2 | 8. 0.48½ | 1 | 131.15.26 | 38. 52. 11 | U | 0.47,4 | 29,59 | 37 |
| | 3 | 8.56. 9 | 1 | 146. 7. 3 | 42. 47. 8 | U | 0.54,7 | 29,81 | 38 |
| | 4 | 9.51.24 | 1 | 160.57. 3 | 47. 23. 18,5 | U | 1. 3,1 | 29,66 | 43 |
| | 5 | 10.46.40 | 1 | 175.47.29 | 52. 21. 8 | U | 1.14,0 | 29,70 | 50 |
| | 7 | 12.40.27 | 2 | 206.17.16 | 62. 23. 49 | L | 1.51,1 | 29,92 | 45 |
| | 8 | 13.36.45 | 2 | 221.23.10 | 66. 10. 39,5 | L | 2. 8,0 | mean. | |
| | 12 | 17.14.38 | 2 | 279.57. 0 | 69. 58. 19,5 | U | 2.41,8 | 30,16 | 41 |
| | 14 | 18.51.36 | 2 | 306.13.41 | not obſerved | | | | |
| | 28 | 5. 0.26 | 1 | 111.40. 8 | 35. 7. 38 | U | 0.40,6 | 29,90 | 49 |
| | 30 | 6.48. 8 | 1 | 140.38. 8 | 41. 11. 45,2 | U | 0.50,3 | 29,96 | 51 |
| May | 1 | 7.41.24½ | 1 | 154.58.42 | 45. 25. 21,5 | U | 0.58,4 | 30,03 | 51 |
| | 2 | 8.34.36 | 1 | 169.17.56 | 50. 7. 4,0 | U | 1. 9,7 | 30,08 | 47 |
| | 3 | 9.28. 8 | 1 | 183.42.19 | 54. 58. 38 | U | 1.22,6 | 29,91 | 47 |
| | 4 | 10.22.27 | 1 | 198.18.24 | 59. 39. 41 | U | 1.38,0 | 29,67 | 47 |
| | 5 | 11.17.45 | 1 | 213. 9.20 | 63. 49. 32 | U | 1.53,3 | 29,40 | 55 |
| | 6 | | | | 67. 25. 40 | C. | 2.16,7 | 29,54 | 48 |

| Years. | Days, N. S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Th. mom. |
|---|---|---|---|---|---|---|---|---|---|
| 1754 | | H. M. S. | | D. M. S. | D. M. S. | | M.S. | | |
| May | 6 | 12.15. 6 | C | 228.31. 1 | 67. 25. 40 | C | 2.16,7 | 29,54 | 48 |
| | 17 | 21. 6.56 | 2 | 12.40.53 | 46. 25. 30,5 | CE | 1. 0,0 | mean. | |
| | 18 | 21.51.12 | 2 | 24.45.51 | | | | | |
| | 28 | 5.37.43 | 1 | 150.35. 5 | 43. 53. 40 | U | 0.55,0 | mean. | |
| | 30 | 7.21.41 | 1 | 178.37. 7 | 53. 7. 17 | UU | 1.14,5 | 29,75 | 59 |
| | 31 | 8.13.57 | 1 | 192.42.16 | 57. 47. 29 | U | 1.29,4 | 29,85 | 57 |
| June | 2 | 10. 1.25 | 1 | 221.36.56 | 65. 46. 11,2 | U | 2. 4,0 | 29,65 | 57 |
| | 3 | 10.56.44 | 1 | 236.28. 7 | 68. 31. 43,5 | UU | 2.22,8 | 29,58 | 53 |
| | 5 | 12.49.57 | 2 | 266.49.26 | 70. 42. 11:: | L | 2.39,5 | 29,65 | 56 |
| | 6 | 13.43.36 | 2 | 281.15.22 | 70. 4. 37,5 | UU | 2.37,0 | 29,81 | 51 |
| | 14 | 19.45.14½ | 2 | 19 48. 1 : | 44. 8. 2,3: | UU | 0.53,5 | 29,43 | 60 |
| | 24 | 3.34.16 | 1 | 146.14.51 | 42. 23. 38,2 | UU | 0.51,0 | 29,80 | 61 |
| | 29 | 7.55.31 | 1 | 216.40. 5 | 64. 26. 52 | U | 1.56,6 | 29,80 | 60 |
| July | 2 | 10.37.48 | 1 | 260.18.29 | 70. 36. 40 | U | 2.39,4 | 30,02 | 59 |
| | 4 | 12.25.51 | 2 | 289.21.50 | 69. 19. 49,5 | UU | 2.27,5 | 29,95 | 62 |
| | 13 | 19. 9. 9 | 2 | 39.20.11 | 39. 1. 14,2 | U | 0.45,0 | 29,66 | 61 |
| | 22 | 2.20.30 | 1 | 155.21.16 | 44. 57. 10:: | U | 0.54,1 | 29,65 | 71 |
| | 25 | 5. 0. 4½ | 1 | 198.18.51 | 59. 4. 31 | UU | 1.31,3 | 29,73 | 67 |
| | 31 | 10.17.34 | 1 | 283.49.12 | 69. 48. 32 | U | 2.31,6 | 29,82 | 59 |
| Aug. | 1 | 11. 7.46 | 1 | 297.23.20 | 68. 7. 22 | U | 2.19,1 | 29,77 | 58 |
| | 2 | 11.55.57½ | 1 | 310.27.18 | 65. 39. 2,2 | UU | 2. 3,2 | 29,75 | 59 |
| | 3 | 12.44.14 | 2 | 323.32.34 | 62. 33. 55,5 | UU | 1.48,0 | 29,75 | 57 |
| | 4 | 13.28.36½ | 2 | 335.39. 8 | 59. 3. 14,0 | UU | 1.33,4 | 29,68 | 57 |
| | 8 | 16.19. 6 | 2 | 22.20.10 | 43. 51. 55 | UU | 0.54,3 | 29,75 | 55 |
| | 9 | 17. 3.13 | 2 | 34.22.44 | 40. 29. 34,5 | U | 0.49,1 | 30,00 | 51 |
| | 10 | 17.49.13 | 2 | 46.53.45 | 37. 34. 40 | U | 0 44,1 | 30,05 | 53 |
| | 13 | 20.22.13 | 2 | 88.12.28 | 33. 18. 29 | U | 0.36,8 | 29,92 | 61 |
| | 14 | 21 17.52 | 2 | 103. 8.33 | 34. 13. 11,5 | CE | 0.38,0 | 29,88 | 61 |
| | 21 | 2.52.30 | 1 | 192.56.45 | 57. 12. 22 | UU | 1.29,0 | mean. | |
| | 23 | 4.41.10 | 1 | 222. 9.24 | 65. 17. 14 | UU | 1.58,4 | 29,72 | 58 |
| | 25 | 6.29.15 | 1 | 251.13.23 | 69. 46. 18,2 | UU | 2.27,8 | 29,66 | 66,5 |
| | 26 | 7.22.23 | 1 | 265.31.41 | 70. 24. 43,5 | U | 2.35,6 | 30,07 | 65 |

| Years. | Days. N. S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1754 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Aug. | 27 | 8.14.16 | I | 279.31.10 | 70. 0. 29 | U | 2.31,7 | 29,96 | 61 |
| | 28 | 9. 4.29 | I | 293. 5.39 | 69. 9. 33 | L | 2.29,1 | 30,04 | 55 |
| | 30 | 10.39.12 | I | 318.48.33 | 64. 8. 37,5 | L | 1.56,0 | 30,00 | 59 |
| | 31 | 11.23.55 | I | 331. 0.26 | 60. 18. 44,5 | U | 1.39,5 | 30,09 | 57 |
| Sep. | 1 | 12. 8.19 | C | 343. 7.21 | 56. 54. 8,5 | C | 1.28,0 | 30,13 | 51,5 |
| | 2 | 12.51.53 | 2 | 355. 1.46 | 52. 49. 12,5 | U | 1.16,4 | 30,19 | 50 |
| | 4 | 14.16.42 | 2 | 18.15.45 | 45. 14. 20 | U | 0.58,2 | 30,04 | 50 |
| | 5 | 15. 0. 6 | 2 | 30. 7.39 | 41. 46. 25,2 | U | 0.51,7 | 30,09 | 49,5 |
| | 6 | 15.44.53 | 2 | 42.20.27 | 38. 43. 7 | U | 0.45,5 | 30,02 | 57 |
| | 8 | 17.20.18 | 2 | 68.13.57 | 34. 26. 23½ | L | 0.39,4 | 29,88 | 50 |
| | 11 | 19.59. 5 | 2 | 110.59.35 | 35. 24. 44 | L | 0.40,7 | 29,96 | 52,5 |
| | 12 | 20.54.49 | ::: | 125.56.55 | not observed | | | | |
| | 21 | 4.22. 7 | 1 | 245.58. 1 | 69. 9. 59,5 | U | 2.28,0 | 30,13 | 59,5 |
| | 22 | 5.16.59 | 1 | 260.42.21 | 70. 12. 48 | U | 2.37,1 | 30,19 | 58,5 |
| | 23 | 6.10.14 | 1 | 275. 2.26 | 70. 40. 12 | L | 2.39,8 | 29,99 | 59 |
| | 24 | 7. 1.26 | 1 | 288.51.47 | 69. 36. 1,7 | L | 2.34,0 | 29,96 | 50 |
| | 25 | 7.50.25 | 1 | 302. 7.36 | 67. 40. 16,5 | L | 2.20,0 | 30,96 | 62 |
| | 26 | 8.37.14½ | 1 | 314.51. 2 | 65. 2. 47 | L | 2. 0,0 | 29,87 | 60,5 |
| | 27 | 9.22.13 | 1 | 327. 6.38 | 61. 53. 6,5 | L | 1.46,0 | 30, 0 | 55 |
| | 28 | 10. 5.46 | 1 | 339. 0.52 | 58. 20. 53 | L | 1.33,8 | 30,22 | 51 |
| | 29 | 10.48.25 | 1 | 350.41.23 | 54. 34. 58,7 | L | 1.21,2 | 30,22 | 52 |
| | 30 | 11.30.41½ | 1 | 2.16.26 | 50. 44. 18,8 | L | 1.10,0 | 30,10 | 54 |
| Oct. | 1 | 12.15.12 | 2 | 14.25. 2 | 46. 27. 19 | U | 1. 0,4 | 30, 0 | 52 |
| | 3 | 13.42.48 | 2 | 38.20.55 | 39. 40. 46,5 | U | 0.48,7 | 30,28 | 47 |
| | 6 | 16. 5.55 | 2 | 77.11. 0 | 33. 46. 10,5 | U | 0.38,0 | 29,32 | 46,5 |
| | 7 | 16 57. 3 | 2 | 90.59.13 | 33. 30. 19,5 | U | 0.38,8 | 29,56 | 38 |
| | 9 | 18.42.53 | 2 | 119.29.25 | 36. 3. 30 | L | 0.41,2 | 29,03 | 53 |
| | 10 | 19.36.51 | 2 | 134. 0.14 | 39. 30. 26,5 | L | 0.46,4 | 29,30 | 50 |
| | 20 | 4. 0.59 | 1 | 269.15.11 | 70. 36. 11,5 | CL | 2.39,0 | 30,21 | 62,5 |
| | 21 | 4.54.40 | 1 | 283.41.46 | 70. 9. 17,5 | L | 2.36,2 | 30,13 | 59 |
| | 22 | 5.45.40 | 1 | 297.27.51 | 68. 29. 12,5 | L | 2.23,0 | 29,93 | 56,5 |
| | 23 | 6.33.57 | 1 | 310.33.15 | 66. 3. 1,7 | L | 2. 9,1 | 29,86 | 49 |
| | 24 | 7.19.50½ | 1 | 323. 2.45 | 63. 1. 51,2 | L | 1.51,0 | 29,72 | 54 |

| Years. | Days N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Baromet. | Therm. |
|---|---|---|---|---|---|---|---|---|---|
| 1754 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Oct. | 26 | 8.46.43 | 1 | 346.47.39 | 55. 53. 16,0 | L | 1.21,7 | 29. 19 | 55 |
| | 28 | 10.11.17 | 1 | 9.58. 0 | 48. 13. 20,5 | L | 1. 4,4 | mean. | |
| | 29 | 10.54.15 | 1 | 21.43.27 | 44. 32. 42,5 | L | 0.57,0 | 29,41 | 41 |
| Nov. | 5 | 16.37 45 | 2 | 114.43.57 | 35. 47. 47,5 | L | 0.42,0 | 29,62 | 41 |
| | 6 | 17.30. 9 | 2 | 128.51.15 | 38. 11. 41,8 | L | 0.46,0 | 29,33 | 36 |
| | 7 | 18.22.30 | 2 | 142.57.51 | 41. 36. 26 | L | 0.50,3 | 28,90 | 42 |
| | 8 | 19.14.54 | 2 | 157. 5.10 | not obſerved | | | | |
| | 10 | 21. 1.22 | 2 | 185.44.38 | 55. 6. 53 | L | 1.21,4 | 29,10 | 44 |
| | 11 | 21.56.19 | 2 | 200.30.16 | 59. 35. 4 | CE | 1.37,0 | mean. | |
| | 18 | 3.35 36 | 1 | 291.28.22 | 69. 29. 34,5 | L | 2.35,0 | 30,09 | 47 |
| | 19 | 4.26.32 | 1 | 305.13.37 | 67. 18. 47,5 | L | 2.20,4 | 30,12 | 43 |
| | 20 | 5.14.31 | 1 | 318.14.23 | 64. 26. 52 | L | 2. 3.7 | 30,09 | 40 |
| | 21 | 5.59.58 | 1 | 330.37.16 | 61. 5.45 | L | 1.47,3 | 30,04 | 39 |
| | 24 | 8. 8.15 | 1 | 5.44. 7 | 49. 44. 2 | L | 1. 6,5 | 28,97 | 45 |
| | 26 | 9.34.28 | 1 | 29.19. 9 | 42. 25. 40 | L | 0.54,2 | 29,41 | 31,5 |
| | 27 | 10.19.42 | 1 | 41.38.37 | 39. 16. 58,2 | L | 0.49,2 | 29,55 | 28 |
| | 28 | 11. 6.53 | 1 | 54 27.36 | 36. 41. 54,8 | L | 0.45,6 | 30,00 | 27 |
| | 29 | 11.56. 7 | 1 | 67.47.10 | 34. 31. 58 | C | 0.42,5 | 30,09 | 25 |
| | 30 | 12.49.22 | 2 | 82. 7.15 | 33. 53. 33 | L | 0.41,3 | 30,00 | 25 |
| Dec. | 1 | 13.41.42 | 2 | 96.13.39 | 33. 57. 4,5 | L | 0.41,2 | 29,96 | 27 |
| | 9 | 20.39.57 | 2 | 208.57.34 | 62. 9. 0 | L | 1.46,7 | 29,21 | 47 |
| | 10 | 21.35.19 | 2 | 223.49.31 | 65. 39. 3,3 | CE | 2. 5,0 | mean. | |
| | 17 | 3. 5.11½ | 1 | 312.26. 1 | 66. 3. 21,5 | L | 2.13,4 | 29,84 | 36 |
| | 18 | 3.52.49 | 1 | 325.21.30 | 62. 51. 1,2 | L | 1.56,0 | 30,14 | 39 |
| | 19 | 4.38. 0 | 1 | 337 40.12 | 59. 14. 44,7 | L | 1.41,6 | 30,31 | 35 |
| | 20 | 5.21.26½ | 1 | 349.32.47 | 55. 25. 10 | L | 1.26,8 | 30,15 | 37 |
| | 26 | 9.47.48 | 1 | 62.13.54 | 35. 35. 50,5 | L | 0.42,2 | 29,95 | 41 |
| | 28 | 11.31. 2½ | 1 | 90. 5. 5 | 33. 46. 31 | L | 0.40,2 | 30,20 | 36 |
| 1755 Jan. | 3 | 16.51.44 | 2 | 176.23.25 | 51. 27. 49 | L | 1.15,7 | 30,07 | 33 |
| | 15 | 2.30.34½ | 1 | 332.20.23 | 60. 50. 9 | CE | 1.47,4 | 29,54 | 28 |
| | 17 | 3.58.37 | 1 | 356.22.53 | 53. 25. 6,5 | L | 1.20,8 | 29,61 | 29 |
| | 22 | 7.38.16 | 1 | 56.22.25 | 36. 42. 3,5 | L | 0.45,2 | 29,99 | 30 |
| | 23 | 8.27.12½ | 1 | 69.37.40 | 34. 53. 34 | L | 0.42,6 | 30,19 | 30 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1755 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. | |
| Jan. | 24 | 9.18.31 | 1 | 83.28.25 | 33. 57. 55,5 | L | 0.41,4 | 30,12 | 27 |
| | 27 | 12. 2.46½ | C | 127.36.33 | 37. 21. 21,5 | C | 0.45.4 | 29,46 | 31 |
| | 28 | 12.58.46 | 2 | 142.37.50::: | | | | | |
| | 31 | 15.39.25 | 2 | 185.51.37 | 54. 24. 51— | L | 1 23.8 | 29,92 | 33 |
| Feb. | 1 | 16.32.18 | 2 | 200. 6. 8 | 59. 0. 22 | L | 1.40,4 | 29,94 | 31 |
| | 2 | 17.25.32½ | 2 | 214.26.10 | 63. 8. 46,5 | L | 1.58,7 | 29,85 | 31 |
| | 3 | 18.19.28 | 2 | 228.56.16 | 66. 34. 28,5 | L | 2.20,8 | 30,11 | 28 |
| | 18 | 5.30.48 | 1 | 51. 1.49 | 37. 52. 18 | L | 0.46,0 | 29,92 | 39 |
| Mar. | 17 | 3.26.23 | 1 | 46.27.19 | 38. 37. 42,5 | CE | 0.45.7 | mean. | |
| | 22 | 7.31.42 | 1 | 112.52.51 | 34. 56. 20,5 | U | 0.40,7 | 29,47 | 39 |
| | 23 | 8.24.54 | 1 | 127.12. 5 | 37. 9. 1,5 | U | 0.44,3 | 29,52 | 38 |
| | 25 | 10.13.17 | 1 | 156.20.33 | 44. 24. 43,5 | U | 0.56,0 | 29,50 | 47 |
| | 28 | 13. 2.44 | 2 | 201.46.38 | 59. 24. 42,5 | L | 1.37,8 | 29,90 | 47 |
| | 29 | 14. 0. 3 | 2 | 217. 7.56 | 63. 43. 29,2 | L | 1 59.3 | 30,05 | 41 |
| Apr. | 16 | 3.44.11 | 1 | 80.29. 8 | 33. 59. 6 | CE | 0.38,0 | mean. | |
| | 17 | 4.33.41 | 1 | 93.52.21 | 33. 31. 18,5 | U | 0.37,2 | 29,95 | 60 |
| | 18 | 5.24. 8 | 1 | 107.30.46 | 34. 17. 19 | U | 0.38,7 | 30,04 | 57 |
| | 19 | 6.15.22 | 1 | 121.20.37 | 36. 2. 19,8 | U | 0.41,0 | | 58 |
| | 20 | 7. 7. 9 | 1 | 135.18.40 | 38. 44. 51,5 | U | 0.46,0 | | 58,5 |
| | 22 | 8.52.25 | 1 | 163.40.15 | 46. 36. 35 | U | 0.59,3 | 29,85 | 59 |
| | 25 | 11.38.31 | 1 | 208.15.59 | 60. 56. 42 | U | 1.42,1 | 29,50 | 49 |
| | 26 | 12.39.24 | 2 | 224.30.51 | 64. 59. 34 | U | 2. 2,4 | 29,52 | 46 |
| May | 3 | 19. 4.18 | 2 | 327.54. 2 | 62. 9. 28 | U | 1 51,7 | 29,90 | 39 |
| | 4 | 19.49.17 | 2 | 340. 9.50 | 58. 35. 22 | U | 1 34.7 | 29,84 | 46 |
| | 17 | 5. 2. 7½ | 1 | 130.34.47 | 37. 31. 40,2 | U | 0.43,7 | 29,95 | 55 |
| | 18 | 5.52.51½ | 1 | 144.17. 0 | 40. 43. 50 | U | 0.49.5 | 30,18 | 54 |
| | 19 | 6.43.46 | 1 | 158. 1.59 | 44. 39. 6½ | U | 0.57,5 | 30,21 | 49 |
| | 20 | 7.35.16 | 1 | 171.55.37 | 49. 6. 36 | U | 1. 6,7 | 30,15 | 51 |
| | 22 | 9.22.10 | 1 | 200.41.49 | 58. 35. 51 | U | 1.33,4 | 30,16 | 56 |
| | 23 | 10.18.33 | 1 | 215.49. 3 | 62. 57. 48,5 | U | 1.53,0 | 30,15 | 51 |
| | 26 | 13.19.47 | 2 | 264.12.24 | 70. 24. 13,5 | U | 2.42,0 | 30,03 | 48,5 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1755 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| May | 27 | 14.18.51 | 2 | 280. 0. 1 | 70. 19. 15,5 | U | 2.37,1 | 29,90 | 57 |
| | 28 | 15.15.23 | 2 | 295. 9.22 | 69. 0. 53 | UU | 2.31,7 | 30,11 | 46 |
| | 29 | 16. 8 37 | 2 | 309.29.11 | 66. 43. 13,5 | U | 2.13,0 | 29,89 | 50 |
| June | 1 | 18.30. 2 | 2 | 347.53.39 | 56. 22. 26 | U | 1.24,8 | 29,90 | 57 |
| | 2 | 19.13.11 | 2 | 359.41.52 | 52. 27. 15,5 | UU | 1.12,6 | 30,00 | 63 |
| | 3 | 19.55.39 | 2 | 11.19.50 | 48. 33. 42,5 | UU | 1. 3.0 | 29,97 | 65 |
| | 16 | 5.31. 6 | 1 | 167.24.47 | 47. 21. 32,3 | UU | 1. 0,0 | 29,90 | 66 |
| | 19 | 8. 7. 3 | 1 | 209.27.56 | 61. 1. 45 | UU | 1.52,8 | 29,95 | 51 |
| | 20 | 9. 2.41 | 1 | 224.23.48 | 64. 56. 57 | UU | 1.56,8 | 29,90 | 70 |
| | 21 | 10. 0.28 | 1 | 239.51.56 | 68. 0. 54,2 | UU | 2.16,4 | 29,92 | 66 |
| | 24 | 12.59 54 | 2 | 287.48.18 | 69. 55. 0 | UU | 2.33,0 | 29,62 | 55 |
| | 25 | 13.55.40 | 2 | 302.46 19 | 68. 5. 44,2 | U | 2.20,4 | 29,87 | 55 |
| July | 4 | 20.47. 0 | 2 | 54.45.22 | 36. 54. 5,0 | U | 0.42,0 | 29,90 | 61 |
| | 14 | 4.19.39 | 1 | 177. 6. 3 | 50. 19. 36 | UU | 1. 6,1 | 29,91 | 69 |
| | 15 | 5.10.36½ | 1 | 190.51.35 | 54. 56. 24,2 | UU | 1.18,5 | 29,91 | 67 |
| | 18 | 7.51.11 | 1 | 234. 4. 9 | 66. 48. 43,5 | UU | 2. 9,0 | 29,86 | 64 |
| | 20 | 9.45.59 | 1 | 264.49.13 | 70. 23. 33 | UU | 2.35,2 | 29,86 | 63 |
| | 24 | 13.27.37 | 2 | 324.19.21 | 63. 43. 12,2 | UU | 1.54,6 | 29,74 | 53 |
| | 25 | 14.16. 1 | 2 | 337.26.31 | 60. 5. 47,7 | UU | 1,38,1 | 29,77 | 55 |
| | 30 | 17.56.20 | 2 | 37.36. 5 | 41. 3. 25,3 | UU | 0.49,5 | 29,87 | 54 |
| | 31 | 18.40.53½ | 2 | 49.45.20 | 38. 7. 9,0 | U | 0.45,0 | 29,91 | 52 |
| Aug. | 14 | 5.47. 7 | 1 | 229.34.52 | 65. 43. 48 | U | 2. 1,0 | 29,76 | 68 |
| | 15 | 6.42.41 | 1 | 244.29.50 | 68. 23. 58 | UU | 2.18,4 | 29,72 | 65 |
| | 16 | 7.39. 5 | 1 | 259.37.10 | 69. 59. 23,3 | UU | 2.31,2 | 29,74 | 63 |
| | 17 | 8.35.33 | 1 | 274.45.45 | 70. 23. 55,2 | UL | 2.36,3 | 30,00 | 62 |
| | 18 | 9 31.10 | 1 | 289.41.18 | 70. 9. 43,3 | LL | 2.34,6 | 29,97 | 61 |
| | 19 | 10.25. 3 | 1 | 304.11. 9 | 68. 19. 35,2 | LC | 2.19,4 | 29,60 | 59 |
| | 21 | 12. 6.59 | C | 331.42.31 | 61. 58. 36 | CUU | 1.44,9 | 29,75 | 59 |
| | 22 | 12.55. 1 | 2 | 344.44. 2 | 57. 55. 27,5 | UU | 1.30,4 | 29,83 | 54 |
| | 24 | 14.24.11 | 2 | 9. 3.30 | 49. 55. 35,5 | | 1. 7,6 | 29,75 | 52 |
| | 27 | 16.35. 3 | 2 | 44.49 13 | | | | | |

| Years. | Days, N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barome'er. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1755 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Sept. | 13 | 6.31.14½ | 1 | 270.12.43 | 70. 20. 34,5 | U | 2.38,2 | 30,08 | 57 |
| | 14 | 7.26.39 | 1 | 285. 5.12 | 70. 28. 1,7 | L | 2.38,3 | 30,05 | 59 |
| | 15 | 8.20.17 | 1 | 299.31.10 | 68. 59. 8,5 | L | 2.25,7 | 29,99 | 60 |
| | 16 | 9.11 44½ | 1 | 313.24.15 | 66. 35. 25,2 | L | 2. 9,3 | 29,96 | 60 |
| | 17 | 10. 0.55 | 1 | 326.43. 0 | 63. 29. 0 | L | 1.52,7 | 29,92 | 58 |
| | 18 | 10.48. 0 | 1 | 339.30.21 | 59. 52. 32,7: | L | 1.36,8 | 29,80 | 57 |
| | 27 | 17.35.58 | 2 | 90.38.49 | 33. 26. 25 | U | 0.37,7 | 29,60 | 49 |
| | 29 | 19.16. 0 | 2 | 117.41.44 | 35. 31. 56 | L | 0.40,6 | 29,48 | 48 |
| Oct. | 1 | 20.59.18 | 2 | 145.33.38 | 40. 58. 12 :: | L | 0.50,0 | 29,77 | 48,3 |
| | 10 | 4.24.46 | 1 | 265. 7.15 | 70. 17. 13,7 | U | 2.37,0 | mean. | |
| | 15 | 8.45.53 | 1 | 335.30.23 | 61. 6. 1,7 | L | 1.41,6 | 29,30 | 51 |
| | 16 | 9.31 12 | 1 | 347.51. 6 | 57. 18. 1,5 | L | 1.29,0 | 29,33 | 44 |
| | 17 | 10.15.13 | 1 | 359.52.15 | 53. 20. 9 | L | 1.17,2 | 29,55 | 45 |
| | 21 | 13.11.38 | 2 | 48. 2.25 | | | | | |
| | 22 | 13.56.56½ | 2 | 60.22.57 | 36. 6. 31,2 | U | 0.42,7 | 29,55 | 38 |
| | 24 | 15.30.52 | 2 | 85.54. 3 | 33. 55. 55 | L | 0.38,2 | 29,83 | 40 |
| | 25 | 16.19.16 | 2 | 99 0.58 | 33. 52. 52,5 | L | 0.40,3 | 30,11 | 36 |
| | 28 | 18.48. 0½ | 2 | 139.15.44 | 39. 16. 57,2 | L | 0.48,2 | 30,24 | 45 |
| Nov. | 9 | 5. 3.40 | 1 | 304.26.20 | 68. 30. 56,5 | L | 2.27,1 | 29,27 | 37 |
| | 10 | 5.55.22 | 1 | 318.23.12 | 65. 46. 27,2 | L | 2.12,1 | 29,44 | 29,5 |
| | 11 | 6.43.58 | 1 | 331 33.24 | 62. 24. 58 | L | 1.54,0 | 29,65 | 32 |
| | 12 | 7.30. 2 | 1 | 344. 5.14 | 58. 40. 7 | L | 1.35,1 | 29,34 | 39 |
| | 13 | 8.14.16 | 1 | 356. 9.53 | 54. 43. 2,5 | L | 1.19,4 | 28,97 | 46 |
| | 15 | 9.40.19 | 1 | 19.42.23 | 46. 50. 47,5 | L | 1. 3,0 | 29,44 | 34 |
| | 22 | 15. 4.57 | 2 | 107.59.10 | 34. 9. 18,2 | L | 0.38,5 | 29,20 | 46 |
| | 23 | 15.53.56 | 2 | 121.15. 5 | 35. 37. 15 | L | 0.41,3 | 29,32 | 41 |
| | 25 | 17.31.49½ | 1 | 147.45.45 | 41. 7. 40 | L | 0.51,3 | 29,33 | 34 |
| | 26 | 18.21. 0½ | 2 | 161. 4.40 | 44. 58. 22 | L | 1. 0,2 | 29,65 | 28 |
| Dec. | 1 | 22 47.18 | 2 | 232.45.35 | | | | | |
| | 9 | 5.26. 2 | 1 | 339.36.58 | 60. 20. 55,5 | L | 1.41,0 | 29,81 | 48 |
| | 10 | 6.11.46 | 1 | 352. 4. 6 | 56. 21. 51,5 | L | 1.28,2 | 29,77 | 43 |
| | 14 | 9. 5. 3 | 1 | 39.27. 2 | 41. 8. 50 | L | 0.50,8 | 29,40 | 39 |

| Years. | Days. N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1755 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Dec. | 16 | 10.35.14 | 1 | 64. 1.37 | 35. 52. 47,7 | L | 0.41,5 | 29,19 | 41 |
| | 20 | 13.51.30½ | 1 | 117.10.25 | 34. 53. 25 | L | 0.40,4 | 29,32 | 39 |
| | 21 | 14.40.49 | 2 | 130.31 8 | 36. 56. 50 | L | 0.44,6 | 29,57 | 33 |
| | 23 | 16.18.19 | 2 | 156.56. 0 | 43. 25. 13,7 | L | 0.57,0 | 30,05 | 34 |
| | 27 | 19.38.49 | 2 | 211. 8.22 | 61. 7. 50,5 | L | 1.44,3 | 29,52 | 44 |
| | 28 | 20.33.53 | 2 | 225.55.44 | 65. 9. 58 | L | 2. 5,6 | 29,50 | 39 |
| 1756 | | | | | | | | | |
| Jan. | 5 | 3.16.19 | 1 | 333.42.38 | | | | | |
| | 7 | 4.50.32 | 1 | 359.18. 8 | 54. 13. 24,2 | L | 1.20,4 | 29,50 | 41 |
| | 10 | 7. 1.30 | 1 | 35. 5.28 | 42. 35. 20 | L | 0.53,5 | 29,85 | 44 |
| | 13 | 9.17. 4 | 1 | 72. 1.50 | 34. 54. 30,5 | L | 0.40,7 | 29,60 | 40 |
| | 15 | 10.54.12 | 1 | 98.21. 1 | 33. 35. 25,5 | L | 0.39,0 | 29,70 | 39 |
| | 16 | 11.44. 8½ | 1 | 111.51.25 | 34. 20. 46 | L | 0.41,0 | 29,92 | 34 |
| | 18 | 13.26.30 | 2 | 139.29.12 | 38. 41. 26 | L | 0.47,4 | 29,84 | 38 |
| | 19 | 14 16. 1 | 2 | 152.53.15 | 42. 5. 9 | L | 0.53,3 | 29,68 | 37 |
| | 20 | 15. 5. 9 | 2 | 166.11.20 | 46. 4. 54,2 | L | 1. 1,5 | 29,88 | 38 |
| | 21 | 15.54.14 | 2 | 179.28 41 | 50. 28. 19,2 | L | 1.11,5 | 29,94 | 40 |
| | 23 | 17.34.31 | 2 | 206.35.31 | 59. 29. 53,2 | L | 1.42,0 | 29,95 | 33 |
| | 25 | 19.21.50 | 2 | 235.27.51 | 67. 5. 41,5 | L | 2.22,3 | 30,15 | 34 |
| Feb. | 5 | 4.11.52 | 1 | 18.11.29 | 48. 1. 30,5 | L | 1. 5,6 | 30,04 | 41 |
| | 7 | 5.39.52 | 1 | 42.13.24 | 40. 49. 36,5 | L | 0.51,4 | 30,10 | 39 |
| | 8 | 6.24 32½ | 1 | 54.24.30 | 37. 57. 49 | L | 0.46,3 | 29,95 | 38 |
| | 10 | 7.57 21 | 1 | 79.38.46 | 34. 16. 29,5 | L | 0.40,2 | 29,69 | 37 |
| | 11 | 8.45.45 | 1 | 92.45.47 | 33. 39. 35,5 | L | 0 39,7 | 30,03 | 37 |
| | 13 | 10.25.33 | 1 | 119.45.18 | 34. 45. 33 | U | 0.41,6 | 30,41 | 40 |
| | 14 | 11.16.10 | 1 | 133.25.37 | 37. 0. 21 | U | 0.44,7 | 30,17 | 41 |
| | 16 | 12.59.22 | 2 | 161.16.18 | 44. 30. 3,2 | L | 0.58,0 | 29,72 | 38 |
| | 19 | 15.31.32 | 2 | 202.22.21 | 58. 3. 30 | L | 1.38,0 | 30,15 | 29 |
| | 21 | 17.17.57 | 2 | 231. 1.13 | 66. 1. 59 | L | 2. 9,8 | 30,33 | 36 |
| | 22 | 18.13.34 | 2 | 245.56.54 | 68. 51. 56,3 | L | 2.36,4 | 30,18 | 32 |
| Mar | 9 | 6.37. 3 | 1 | 87. 6.47 | 33. 50. 9,2 | L | 0.39,7 | 30,51 | 44 |
| | 12 | 9. 4.49 | 1 | 127. 6.48 | 35. 51. 45,2 | U | 0.43,4 | 30,04 | 35 |
| | 13 | 9.55.12 | 1 | 140.43.51 | 38. 34. 36,5 | U | 0.47,3 | 30,23 | 33 |

| Years. | Dys, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Therm. |
|---|---|---|---|---|---|---|---|---|---|
| 1756 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Mar. | 16 | 12 30.40 | 2 | 182.39.31 | 51. 29. 35,5 | L | 1.13,8 | 29,72 | 39 |
| | 20 | 16. 8.20 | 2 | 241. 9.59 | 68. 6. 56 | L | 2.27,3 | 29,53 | 32 |
| Apr. | 9 | 7.43.57 | 1 | 134.26.25 | 37. 6. 38,5 | U | 0.43,9 | 29,75 | 44 |
| | 10 | 8.33.30 | 1 | 147.50.43 | 40. 14. 5 | U | 0 49,0 | 29,45 | 42 |
| | 11 | 9.23.33 | 1 | 161.22.42 | 44. 6. 16 | U | 0.56,5 | 29,36 | 37 |
| | 12 | 10.14.27 | 1 | 175. 7.26 | 48. 33. 15 | U | 1. 5,0 | 29,30 | 42 |
| | 13 | 11. 6.35 | 1 | 189.10.45 | 53. 20. 36,2 | U | 1.18,0 | 29,35 | 39 |
| | 14 | 12. 1.33 | C | 203.56.41 | 58. 26. 49,5 | C | 1.34,8 | 29,48 | 41 |
| | 22 | 19.37.34 | 2 | 326. 8.48 | 64. 15. 37,5 | U | 2. 0,0 | 29,74 | 45 |
| May | 7 | 6.24.52 | 1 | 142.12.50 | 38. 36. 14 | U | 0 44,7 | 29,54 | 56 |
| | 8 | 7.13.15 | 1 | 155.19.38 | 42. 5. 13 | U | 0.50,5 | 29,46 | 55 |
| | 10 | 8.52.24½ | 1 | 182. 9.20 | 50. 47. 45,5 | U | 1.10,2 | 29,75 | 49 |
| | 11 | 9.44.22 | 1 | 196. 9.57 | 55. 36. 52 | U | 1.25,0 | 30,20 | 49 |
| | 12 | 10.38.44 | 1 | 210.46.48 | 60. 21. 13,5 | U | 1.42,0 | 30,18 | 49 |
| | 13 | 11.35.53 | 1 | 226. 5.35 | 64. 37. 59 | U | 2. 2,0 | 30,10 | 49 |
| | 15 | 13.39.44 | 2 | 259. 6.48 | 70. 15. 16 | U | 2.37,7 | 29,95 | 45 |
| | 16 | 14.41.37 | 2 | 275.36.43 | 71. 1. 55 | U | 2.49,5 | 29,97 | 43 |
| | 17 | 15.42. 0 | 2 | 291.44. 0 | 70. 23. 9 | U | 2.39,0 | mean. | |
| | 20 | 18 24. 4½ | 2 | 335.19 12 | 62. 2. 6 | U | 1.45,7 | 29,63 | 55 |
| | 21 | 19.11.45 | 2 | 348.15.32 | 58. 3. 8 | U | 1.30,6 | 29,80 | 55 |
| | 31 | 1.57.36 | 1 | 98.52. 4 : | | | | | |
| June | 1 | 2.45.32 | 1 | 111.52.18 | 33. 17. 5,5 | CE | 0 37,0 | mean. | |
| | 3 | 4.20.56 | 1 | 137.45.18 | 37. 19. 31 : | U | 0.43,0 | mean. | |
| | 5 | 5.55.39 | 1 | 163.28 21 : | 44. 16. 50 : | U | 0.55,0 | mean. | |
| | 6 | 6.43.39 | 1 | 176.29.24 | 48. 35. 19 | U | 1. 3,0 | 29,73 | 61 |
| | 8 | 8.24.18½ | 1 | 203.41.42 | 57. 55. 47 | U | 1.29,2 | 29,57 | 56 |
| | 10 | 10.15.59 | 1 | 233.39.44 | 66. 20. 27 | U | 2. 6,3 | 29,37 | 53 |
| | 17 | 17. 7.13 | 2 | 343.59. 5 | 59. 48. 7 | U | 1.38,2 | 29,84 | 51 |
| | 18 | 17.54.35½ | 2 | 356.30.46 | 55. 34. 15 | U | | 29,75 | 52 |
| | 19 | 18.39.55 | 2 | 8.51.37 | 51. 17. 37,5 | U | | 29,94 | 55 |
| | 20 | 19.24. 3 | 2 | 20.54.35 | 47. 9. 0 | U | 1. 1,6 | 30,10 | 55 |
| | 21 | 20. 7.47 | 2 | 32.51.34 | 43. 17. 25,2 | U | 0.53,3 | 30,19 | 60 |
| | 22 | 20.51.48 | 2 | 44.52.47 | 39. 50. 57 : | U | 0.48,0 | mean. | |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1756 | | H. M. S. | | D. M. S. | D. M. S. | | M.S. | | |
| July | 4 | 5.28. 0 | 1 | 185. 7.26 | 51. 19. 37 | U | 1 8,0 | 29,82 | 71 |
| | 5 | 6.16.54 | 1 | 198.22. 4 | 55. 54. 43 | UU | 1.21,6 | 29,93 | 66 |
| | 6 | 7. 7.56 | 1 | 212. 8.56 | 60. 24. 6 | UU | 1.37,7 | 30,02 | 65 |
| | 9 | 9.59.15 | 1 | 258. 2.59 | 70. 11. 35 | UU | 2.35,0 | 29,86 | 59 |
| | 10 | 11. 1.19 | 1 | 274.35.45 | 71. 8. 25,5 | UU | 2.44,7 | 29,89 | 56 |
| | 11 | 12. 3.28 | 1 | 291. 9.42 | 70. 36. 43 | U | 2.39,8 | 29,95 | 57 |
| | 13 | 14. 3.20 | 2 | 323.10.49 | not obſerved | | | | |
| Aug. | 1 | 4.14.28 | 1 | 194.17.19 | 54. 21. 26 | U | 1.20,0 | mean. | |
| | 3 | 5.55.21 | 1 | 221.33. 4 | 62. 59. 59,5 | U | 1.49,4 | 29,74 | 59 |
| | 4 | 6.49.30 | 1 | 236. 6.32 | not obſerved | | | | |
| | 5 | 7.46.25 | 1 | 251.21.54 | 69. 16. 55,2 | U | 2.30,0 | mean. | |
| | 6 | 8.45.44 | 1 | 267.13. 3 | 70. 48. 49 | U | 2.42,8 | 30,03 | 55 |
| | 9 | 11.14.47 | 1 | 315. 3.40 | 67. 51. 24,5 | L | 2.18,8 | 29,94 | 56 |
| | 10 | 12.42.37 | 2 | 330.22.46 | 63. 51. 27,2 | U | 1.55,0 | 29,78 | 55 |
| | 12 | 14.24.41 | 2 | 358. 6.13 | 55. 20. 21,2 | U | 1.29,3 | 29,69 | 55 |
| | 13 | 15.12. 8 | 2 | 10.59. 3 | 50. 52. 58 | U | 1. 9,5 | 29,89 | 56 |
| | 14 | 15.58. 6 | 2 | 23.29.30 | 46. 36. 49 | U | 0.59,4 | 29,80 | 58 |
| | 15 | 16.43.19 | 2 | 35.48.43 | 42. 42. 9 | U | 0.52,0 | 29,60 | 55 |
| | 20 | 20.34.59 | 2 | 98.48.55 | not obſerved | | | | |
| | 28 | 2.11.55½ | 1 | 190.10.53 | 52. 54. 28 | U | 1.16,0 | mean. | |
| | 31 | 4.45.26 | 1 | 231.37.10 | 65. 32. 45 | U | 2. 2,1 | 30,14 | 66 |
| Sept. | 1 | 5.40.36½ | 1 | 246.26.17 | 68. 30. 32,5 | U | 2.22,5 | 30,07 | 62 |
| | 2 | 6.37.48 | 1 | 261.45.36 | 70. 24. 36 | U | 2.37,0 | 30,00 | 61 |
| | 3 | 7.36.14½ | 1 | 277.23.49 | 71. 36. 38 | L | 2.46,0 | 29,84 | 63 |
| | 6 | 10.27.50 | 1 | 323 22. 7 | 66. 2. 27 | L | 2. 8,7 | 30,00 | 52 |
| | 7 | 11.20.53 | 1 | 337.39. 9 | 62. 14. 58 | L | 1.49,5 | 30,05 | 50 |
| | 9 | 13. 2.14 | 2 | 5. 1.50 | 52. 56. 32 | U | 1.15,3 | 29,85 | 53 |
| | 11 | 14.35.23 | 2 | 30 21.17 | 44. 21. 54 | U | 0.56,0 | 30,14 | 55 |
| | 12 | 15.21. 9 | 2 | 42.48.43 | 40. 39. 47½ | U | 0.49,2 | 30,03 | 53 |
| | 13 | 16. 6.59 | 2 | 55.17.16 | 37. 32. 59½ | U | 0.43,4 | 29,64 | 54 |
| | 14 | 16.53.14 | 2 | 67.52. 2 | 35. 8. 14 | U | 0.39,8 | 29,60 | 52 |
| | 15 | 17.40. 4½ | 2 | 80.35.46 | 33. 31. 2 | U | 0.37,7 | 29,74 | 52 |
| | 28 | 3.35.59½ | 1 | 241.48.39 | 67. 47. 58 | U | 2.15,8 | 30,05 | 65 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1756 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Oct. | 1 | 6.20.18 | I | 288.12.48 | 71. 23. 8 | L | 2.47,0 | 29,88 | 56 |
| | 2 | 7 26. 8 | I | 303.26.44 | 69. 52. 17+ | L | 2.33,4 | 29,84 | 56 |
| | 3 | 8.21. 0 | I | 318.11. 8 | 67. 15. 51 | L | 2.15,4 | 29,74 | 51,5 |
| | 4 | 9.13.54 | I | 332.20.58:: | 63. 47. 49 | L | 1.52,4 | 29,49 | 59 |
| | 5 | 10. 3.49 | I | 345.55.52 | 59. 43. 54 | L | 1.38,0 | 29,68 | 48 |
| | 7 | 11.39.20 | I | 11.50.58 | 50. 52. 30½ | L | 1.11,0 | 29,74 | 46 |
| | 9 | 13.13.38 | 2 | 37.27.35 | 42. 6. 2½ | U | 0.56,2 | 29,75 | 53 |
| | 11 | 14.46. 6 | 2 | 62.36.32 | 35. 54. 49 | U | 0.45,0 | 29,12 | 46 |
| | 12 | 15.32.58 | 2 | 75.20.46 | 33. 55. 41 | U | 0.38,7 | 29,26 | 41 |
| | 16 | 18.43.23 | 2 | 127. 1.10 | 34. 49. 42 | U | 0.39,8 | 29,55 | 47 |
| | 29 | 5.22. 0½ | I | 298.56.33 | 70. 39. 50½ | L | 2.41,2 | 29,31 | 46 |
| | 30 | 6.17.46 | I | 313.54.22 | 68. 20. 26 | L | 2.24,3 | 29,86 | 49 |
| Nov. | 1 | 8. 0.55 | I | 341.44. 6 | 61. 12. 35½ | L | 1.46,3 | 30,00 | 44 |
| | 3 | 9.35.27 | I | 7.24.20 | 52. 30. 2 + | L | 1.15,7 | 29,62 | 42 |
| | 4 | 10.21. 6 | I | 19 49.59 | 48. 8. 27 | L | 1. 6,5 | 29,99 | 37 |
| | 5 | 11. 6.28 | I | 32.11.40 | 44. 2. 6 | L | 0.55,8 | 29,58 | 44 |
| | 6 | 11.52. 4½ | I | 44.36.42 | 40. 21. 52½ | L | 0.50,2 | 30,02 | 40,5 |
| | 7 | 12.38.13 | 2 | 57. 9.52 | 37. 17. 15½ | L | 0.46,2 | 30,23 | 33 |
| | 8 | 13.27. 5 | 2 | 70.24. 1 | 34. 26. 26½ | U | 0.41,5 | 30,17 | 33 |
| | 10 | 15. 2. 1 | 2 | 96.10. 6 | 32. 48. 45 | L | 0.39,2 | 29,98 | 29 |
| | 11 | 15.49.37 | 2 | 109. 5.13 | 33. 7. 15,5 | L | 0.39,4 | 29,86 | 30 |
| | 15 | 18.57.10 | 2 | 160. 2.47 | 42. 51. 22 | L | 0.52,7 | 29,50 | 49 |
| | 27 | 5. 6.38 | I | 323.40.14 | 66. 30. 47 | L | 2.18,0 | 30,02 | 33,5 |
| | 28 | 5.58.39 | I | 337.41.48 | 62. 43. 28½ | L | 1.58,4 | 30,31 | 31 |
| Dec. | 3 | 9 49.29 | I | 40.29.36 | 41. 35. 55 | L | 0.53,0 | 30,09 | 37,5 |
| | 8 | 13.45.36 | 2 | 104.36.36:: | 32. 43. 28:: | L | 0.39,0 | 30,30 | 35 |
| | 13 | 17.37.41 | 2 | 167.43.11 | not obſerved | | | | |
| | 14 | 18.23.46 | 2 | 180.15.20 | 49. 16. 56 | L | 1. 8,7 | 29,63 | 35 |
| | 16 | 20. 0.28 | 2 | 206.28. 6 | 58. 34. 37½ | L | 1.37,4 | 29,68 | 33 |
| | 30 | 7.48.11 | I | 36.41.52 | 42. 56. 0,2 | L | 0.57,0 | 30,25 | 29,5 |
| 1757 | | | | | | | | | |
| Jan. | 2 | 10. 5.10 | I | 73.59.26 | 34. 21. 25,2 | L | 0.40,3 | 29,55 | 32,5 |
| | 3 | 10.52.23 | I | 86.48.54 | 32. 32. 14 | L | 0.38,3 | 29,67 | 30 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barom. | Therm. |
|---|---|---|---|---|---|---|---|---|---|
| 1757 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Jan. | 5 | 12.30. 7 | 2 | 113.17.14 | 33. 8. 21,2 | L | 0.40,5 | 30,15 | 24,5 |
| | 7 | 14. 4.18 | 2 | 138.52.10 | 36. 51. 10,5 | L | 0.46,8 | 30,00 | 19,5 |
| | 16 | 21.29.21 | 2 | 259.18.22 | 71. 2 41,5:: | L | 2,55,4 | 29,65 | 26 |
| | 25 | 4.58.20 | 1 | 19.44.47 | 48. 45. 52 | L | 1. 5,4 | 28,72 | 35 |
| | 27 | 6.29.57 | 1 | 44.40.57 | 40. 43. 21,5 | L | 0.50,1 | 29,00 | 33 |
| | 29 | 8. 1.50 | 1 | 69.41.16 | 35. 6. 15,5 | L | 0.42,6 | 29,88 | 29,5 |
| | 30 | 8.48.43 | 1 | 82 25.32 : | 33. 27. 58,5 | L | 0.39,6 | 29,71 | 31 |
| Feb. | 1 | 10.24. 2 | 1 | 108.17.27 : | 32. 23.26½:: | U | 0.39,1 | 30,08 | 25 |
| | 3 | 11.59. 6 | 1 | 134. 5.38 | 35. 59. 22 | L | 0.45,1 | 29,87 | 20 |
| | 6 | 14.19.28 | 2 | 172.14.31:: | 46. 14. 13 | L | 1. 0,3 | 29,36 | 41 |
| | 7 | 15. 5. 3 | 2 | 184 39. 9 : | 50. 34. 4 | L | 1. 9,2 | 29,16 | 44 |
| | 23 | 4.22.44 | 1 | 39.24.11 | 42. 16. 53 | L | 0.52,6 | 29,86 | 47 |
| | 25 | 5.56.10 | 1 | 64.47.55 | 35. 58. 3 | L | 0.41,4 | 29,66 | 50 |
| | 27 | 7.30.42 | 1 | 90.28. 7 | 32. 52. 58,5 | L | 0.39,0 | 30,30 | 37,5 |
| | 28 | 8.18.25 | 1 | 103.24.46:: | 32. 12. 39:: | U | | | |
| Mar. | 1 | 9. 6.10 | 1 | 116.22.10 | 32. 57. 58,5 | U | 0 38,1 | 30,23 | 45,5 |
| | 2 | 9.53.41 | 1 | 129.15.59 | 34. 38. 2 | U | 0.40,6 | 30,20 | 45 |
| | 4 | 11. 7.22 | 1 | 154.43.27 | 40. 24. 33 | U | 0.51,2 | 29,86 | 31,5 |
| | 5 | 12.14.42 | C | 167.34.25 | 44. 16. 30,5 | U | 0.59,6 | 30,15 | 29,5 |
| | 7 | 13.48.43 | 2 | 193. 6.49 | 53. 7. 43,5 | U | 1.20,4 | 29,92 | 31 |
| | 10 | 16.17.26 | 2 | 233.21.13 | 66. 21. 31,5 | L | 2.17,5 | 29,70 | 28 |
| | 11 | 17.11.30 | 2 | 247.53.39 | 69. 24. 59 | L | 2.39,0 | 29,85 | 32 |
| | 13 | 19. 6.10 | 2 | 278.36 34: | 71. 57. 44— | CE | 2.55,1 | 29,51 | 45 |
| | 26 | 5.23.25 | 1 | 85.10.22 | 33. 5. 3,5 | L | 0.38,0 | 30,07 | 46 |
| | 27 | 6.11.22 | 1 | 98.10.41 | 32. 1. 41,5 | U | 0.35,6 | 29,68 | 51,5 |
| | 28 | 6.59.11 | 1 | 111. 8.58 | 32. 24. 49 | U | 0.36.2 | 29,51 | 48 |
| | 29 | 7.46.39½ | 1 | 124. 2.13 | 33. 43. 32,5 | U | 0.38,5 | 29,54 | 43 |
| Apr. | 3 | 11.40. 3 | 1 | 187.28.21 | 51. 18. 45,2 | U | 1.14,0 | 29,83 | 37 |
| | 4 | 12.30.20 | 2 | 201. 3.51 | 56. 0. 34 | U | 1 29,1 | 30,24 | 36,5 |
| | 5 | 13.20.11 | 2 | 214.32 50 | 60. 35. 25,5 | U | 1.45,8 | 30,28 | 39,5 |
| | 6 | 14.12.12 | 2 | 228.34.20 | 64. 44. 54 | U | 2. 4,6 | 30,20 | 44 |
| | 12 | 19.53.45 | 2 | 320. 6.31 | 67. 26. 7 | U | 2.17,0 | 29,09 | 41,5 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1757 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | S. | |
| Apr. | 26 | 6.26.33 | 1 | 131.33. 9 | 34.40. 38 | U | 0.39,2 | 29,82 | 55 |
| | 27 | 7.12.51 | 1 | 144. 8.38 | 37.19. 27 | U | 0.43,3 | 29,90 | 55 |
| | 28 | 7.58.41 | 1 | 156.37.16 | 40.41. 36 | U | 0.49,0 | 29,96 | 55 |
| | 29 | 8.44.29 | 1 | 169. 5.12 | 44.40. 7,2 | U | 0.55.6 | 29,86 | 58 |
| | 30 | 9.30.46 | 1 | 181.40.33 | 49. 6. 11,5 | U | 1. 4,8 | 29,64 | 56 |
| May | 1 | 10.18.12½ | 1 | 194.33.16 | 53.48. 53 | U | 1.17,8 | 29,71 | 51 |
| | 3 | 12. 0.27 | C | 222. 9.23 | 63. 4. 36+ | U | 1.54,7 | 30,18 | 47,5 |
| | 6 | 14.53.24½ | 2 | 268.28.16 | 71.43. 34 | U | 2.57,7 | 29,89 | 39 |
| | 8 | 16.53. 2 | 2 | 300.25.50 | 70. 57. 31,2 | U | 2.49.7 | 29,80 | 38,5 |
| | 10 | 18.44.44 | 2 | 330.24. 9 | 65. 11. 3 | U | 2. 6,1 | 29,67 | 49 |
| | 29 | 8.55.44 | 1 | 201.28.34 | 56. 9,27 | U | 1.24,1 | 29,73 | 55 |
| June | 1 | 11.35.40 | 1 | 244.31.35 | 68.43. 31,2 | U | 2.27,4 | 29,77 | 47 |
| | 2 | 12.38. 6 | 2 | 261. 9.52 | 71. 11. 41 | U | 2.49,0 | 29,97 | 48 |
| | 3 | 13.40. 8 | 2 | 277.42. 7 | 72. 14. 46 | U | 2.59.0 | 29,91 | 48 |
| | 23 | 5.17.27 | 1 | 171.23.51 | 44. 58. 34,5 | U | 0.54,4 | 29,98 | 73,5 |
| | 24 | 6. 1.46½ | 1 | 183.29.46 | 49. 18. 56+ | U | 1. 5,2 | 30,09 | 62,5 |
| | 25 | 6.47. 8 | 1 | 195.51. 6 | 53. 53. 48 | U | 1.16,0 | 30,07 | 66,5 |
| | 26 | 7.34.27 | 1 | 208.41.52 | 58. 31. 46 | U | 1.31,2 | 29,97 | 62 |
| | 27 | 8.24.38 | 1 | 222.15.52 | 62. 58. 49 | U | 1.49,1 | 29,80 | 61 |
| July | 2 | 13.26.32 | 2 | 302.52.35 | 70. 59. 37 | U | 2.45,0 | 29,87 | 51,5 |
| | 5 | 16.18.26 | 2 | 348.55.24 | 59. 59. 38,5 | U | 1.37,8 | 30,04 | 58 |
| | 7 | 17.57.18 | 2 | 15.40.52 | 49. 18. 54 | U | 1. 6,1 | 30,15 | 57,5 |
| | 9 | 19.30.36 | 2 | 41. 2.25 | 41. 29. 5½ | U | 0.49,0 | 30,08 | 66,5 |
| | 12 | 21.51.41 | 2 | 79.21.56 | 33. 8. 18 | CE | 0.37,0 | mean. | |
| | 24 | 6.15.50½ | 1 | 216.35.29 | 61. 4.29,5 | U | 1.38,3 | 29,88 | 72 |
| | 28 | 9.59.43 | 1 | 276.39.11 | 72. 14. 24,5 | U | 2.52,6 | 29,69 | 60 |
| | 30 | 12. 5.25 | 1 | 310. 8.22 | 69. 53. 21,5 | U | 2.31,1 | 29,64 | 59,5 |
| | 31 | 13. 8.14 | 2 | 326.52.15 | 66. 34. 4,0 | U | 2. 7,5 | 29,59 | 60 |
| Aug. | 1 | 14. 5.22 | 2 | 342.10.41 | 62. 15. 30 | U | 1.48,0 | 29,54 | 58 |
| | 2 | 14.59. 9 | 2 | 356.38.46 | 57. 23. 26 | U | 1.27,4 | 29,57 | 56 |
| | 6 | 18.13.59 | 2 | 49.25.58 | 39. 3. 38+ | U | 0.45,2 | 29,95 | 63,5 |

| Years. | Days, N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1757 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Aug. | 7 | 19. 1.16 | 2 | 62.16. 8 | 35. 51. 48 | U | 0.40,3 | 30,08 | 65 |
| | 25 | 8.44.22½ | 1 | 285.22. 2:: | 72. 47. 36,3 | L | 3. 1,1 | 29,77 | 55 |
| | 28 | 11.45.13 | 1 | 333.39.29 | 65. 10. 7 | L | 2. 1,5 | 29,45 | 51,5 |
| | 29 | 12.43.34 | 2 | 349.16.12 | 59. 55. 47,0 | U | 1 37.3 | 29,42 | 51 |
| | 30 | 13.36.55 | 2 | 3.37.57 | 54. 49. 48 | U | 1.21,2 | 29,59 | 47 |
| | 31 | 14.28. 8 | 2 | 17.27.21 | 49. 41. 45 | U | 1. 8,3 | 30,01 | 48 |
| Sep. | 1 | 15.17.50 | 2 | 30.54. 7 | 44. 51. 2,5 | U | 0.57,4 | 30,09 | 51 |
| | 3 | 16.55.10 | 2 | 57.16.16: | 36. 56. 43,5 | U | 0.43,2 | 30,21 | 54 |
| | 18 | 3.48.13½ | 1 | 234.46.57 | 66. 30. 14 : | U | 2. 7,5 | 29,88 | 63 |
| | 19 | 4.40.53 | 1 | 248.58. 8 | 69. 33. 42 : | U | 2.29,0 | 30,09 | 64,5 |
| | 20 | 5.36.20 | 1 | 263.51.17 | 71. 36. 36 | U | 2.49,1 | 30,14 | 59,5 |
| | 23 | 8.32. 9 | 1 | 310.53 17 | 70. 24. 1,5 | L | 2 41,2 | 30,12 | 51 |
| | 26 | 11.19.50½ | 1 | 355.52.52 | 57. 57. 57 | L | 1.32,1 | 29,96 | 49 |
| | 30 | 14.44.54 | 2 | 51.13.44 | 38. 20. 29 | U | 0.46,3 | 30,04 | 44,2 |
| Oct. | 2 | 16.24. 8½ | 2 | 78. 4.42 | 32. 49. 12 | U | 0.38,3 | 29,94 | 38 |
| | 3 | 17.13.31 | 2 | 91.26.30 | 32. 3. 19 | L | 0.37,8 | 30,14 | 34 |
| | 4 | 18. 2.23 | 2 | 104.40.35 | 31. 48. 8,2 | L | 0.36,5 | 29,91 | 41 |
| | 18 | 4.29.19 | 1 | 274.39. 6: | 73. 4.30,5:: | L | 3.11,3 | 30,26 | 46,5 |
| | 19 | 5.27.29 | 1 | 290.13.17 | 72. 56. 1,2 | L | 3. 9,8 | 30,33 | 47 |
| | 20 | 6.25 26 | 1 | 305.43.55 | 71. 24. 33 | L | 2.52,5 | 30,24 | 48 |
| | 23 | 9. 9.50 | 1 | 349.54. 8 | 60. 10. 38 | L | 1.42,4 | 29,94 | 41,5 |
| | 24 | 10. 1. 9 | 1 | 3.45. 9 | 55. 8.19 | L | 1.24,2 | 29,78 | 40 |
| | 25 | 10.51.25 | 1 | 17.20.25 | 49. 59. 29 | L | 1.10,1 | 30,10 | 43 |
| | 28 | 13.23.18 | 2 | 58.22 20 | 36. 20. 34 | U | 0.44,5 | 30,33 | 36 |
| | 30 | 15. 3. 9 | 2 | 85.35.13 | 31. 44. 48,5 | U | 0.35,8 | 30,13 | 50 |
| | 31 | 15.53.56 | 2 | 99. 5.19: | 31. 32. 7,0 | L | 0.35,8 | 30,33 | 49,2 |
| Nov. | 1 | 16.42.59 | 2 | 112.22.20 | 31. 51. 28,0 | L | 0.36,5 | 30,27 | 46 |
| | 3 | 18.17.20 | 2 | 137.59.41 | 35. 21. 27 | L | 0.41,1 | 30,00 | 48,5 |
| | 5 | 19.47. 2 | 2 | 162.27.12 | 41. 56. 21,5 | L | 0.50,4 | 29,00 | 47,5 |
| | 7 | 21.15.30 | 2 | 186.35.58 | 50. 20. 37 | CE | 1.12,2 | 29,64 | 31 |
| | 16 | 4.21. 1 | 1 | 301. 9.18 | 72. 16. 11,5 | L | 2.59,0 | 29,65 | 45,5 |
| | 17 | 5.18.29½ | 1 | 316.32.57 | 69. 49. 18,5 | L | 2.38,0 | 29,68 | 41 |

| Years. | Days. N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1757 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Nov. | 20 | 7.56.37 | 1 | 359. 8.43 | 57. 3. 18 | L | 1.28,3 | 29,36 | 44 |
| | 21 | 8.45.45 | 1 | 12.26.54 | 51. 59. 43 | L | 1.13,0 | 29,40 | 46,5 |
| | 23 | 10.22.51 | 1 | 38.45.43 | 42. 22. 25 | L | 0.52,3 | 29,55 | 46 |
| | 24 | 11.11.58 | 1 | 52. 3.40 | 38. 19. 18,5 | L | 0.46,0 | 29,75 | 43 |
| | 26 | 12.54.24 | 2 | 79.42.41 | 32. 46. 18 : | L | 0.36,1 | 29,26 | 51,5 |
| | 27 | 13.44.53 | 2 | 93.21. 0 | 31. 1. 40,5 | U | 0.34.4 | 29,38 | 46 |
| Dec. | 4 | 19. 7.57 | 2 | 181.14.14 | 48. 19. 9 | L | 1. 3,5 | 29,11 | 45,5 |
| | 5 | 19.51.57 | 2 | 193.15.10 | 52. 55. 20 | L | 1.14,6 | 28,98 | 45 |
| | 14 | 3.10.48½ | 1 | 311. 9.14:: | 70. 46. 37 :: | CE | 2.50,2 | 30,06 | 37 |
| | 17 | 5.54.43 | 1 | 355.12. 0 | 58. 44. 57 | L | 1.36,0 | 29,88 | 34,4 |
| | 18 | 6.44. 7 | 1 | 8.34. 5 | 53. 42. 10 | L | 1.21,5 | 29,93 | 34 |
| | 23 | 10.45.40½ | 1 | 74. 3.11 | 33. 31. 24 | L | 0.38,6 | 29,47 | 39 |
| | 27 | 14. 5.19 | 2 | 128. 2.34 | 33. 10. 17 | L | 0.39,1 | 29,89 | 34 |
| 1758 Jan. | 2 | 18.29.14 | 2 | 200. 6.54 | 55. 22. 36 | L | 1.22,0 | 28,85 | 41 |
| | 6 | 21.50.32 | 2 | 254.31.22:: | | | | | |
| | 13 | 3.47.56 | 1 | 350. 1.50 | 60. 44. 36 : | L | 1.42,6 | 29,51 | 44 |
| | 15 | 5.29.32 | 1 | 17.28.11 | 50. 24. 12,5 | L | 1.11,0 | 29,51 | 36,5 |
| | 16 | 6.17.55 | 1 | 30.35. 7 | 45. 28. 43 | L | 1. 1,1 | 29,82 | 31,5 |
| | 19 | 8.42.35 | 1 | 69.48.31 | 34. 19. 25,5 | L | 0.41,2 | 29,84 | 30,5 |
| | 26 | 14.17.40 | 2 | 160.42.30 | 40. 52. 56,5: | L | 0.52,5 | 30,22 | 33,5 |
| | 30 | 17. 8.59½ | 2 | 207 35.56 | 58. 8. 36 | L | 1.39.4 | 30,58 | 30 |
| Feb. | 1 | 18.42.53 | 2 | 233. 6.32 : | 66. 31. 12 | L | 2.19,7 | 30,22 | 31,5 |
| | 11 | 3.20.14 | 1 | 11.40. 8 | 52. 22. 12 | CE | 1.15,0 | 29,39 | 41 |
| | 13 | 5. 0.46 | 1 | 38.50.34 | 42. 34. 6 | L | 0.52,8 | 29,24 | 41,5 |
| | 15 | 6.39.16 | 1 | 65.30.24 | 35. 9. 3 | L | 0.40,7 | 29,44 | 38 |
| | 16 | 7.28.40 | 1 | 78.52.40: | 32.49.21,5:: | L | 0.37,0 | 28,84 | 41 |
| | 17 | 8.18. 9 | 1 | 92.16. 7 | 31. 1. 0 | U | 0.34,6 | 29,22 | 35,5 |
| | 18 | 9. 7.21 | 1 | 105.35. 6 | 30. 46. 31,5 | U | 0.35,2 | 29,59 | 33 |
| | 20 | 10.43. 8 | 1 | 131.34. 9 | 33. 18. 32— | U | 0.38,7 | 29,34 | 34,5 |
| | 27 | 15.51.34 | 2 | 215.47.18 | 61. 11. 17,5 | L | 1.48,7 | 29,95 | 34,5 |

| Years. | Days, N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1758 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Mar. | 1 | 17.27.21 | 2 | 241.46.13 | 68. 50. 14 | L | 2.29,4 | 29,11 | 35 |
| | 3 | 19.16. 4 | 2 | 270.59.41 | 72. 59. 50,5 | CE | 3.12,8 | 29,52 | 32 |
| | 15 | 5.22.13 | 1 | 73.47.26 | 33. 25. 27 | L | 0.37,4 | 29,51 | 50 |
| | 16 | 6.12.49 | 1 | 87.27.38 | 31. 42. 23½ | L | 0.35,2 | 29,66 | 50 |
| | 17 | 7. 2.52 | 1 | 100.59.35 | 30. 35. 3,0 | U | 0.33,8 | 29,61 | 48,5 |
| | 23 | 11.37.49 | 1 | 175.50. 0 | 45. 50. 19,5 | U | 1. 0,7 | 29,59 | 35,5 |
| | 24 | 12.22.36 | 2 | 188. 2.44 | 50. 18. 32 | U | 1.11,3 | 29,80 | 37 |
| | 26 | 13.49.59 | 2 | 211.55.12 | 59. 58. 11 | L | 1.41,4 | 30,12 | 44 |
| | 28 | 15.24.24 | 2 | 237.33.40 | 68. 0. 42,5 | L | 2.26,0 | 30,18 | 42 |
| | 29 | 16.15.37 | 2 | 251.23.11 | 71. 2. 2 | L | 2.51,7 | 30,07 | 39,5 |
| | 30 | 17. 9.42 | 2 | 265.55.44 | 73. 3. 32,5 | L | 3. 9,1 | 29,75 | 44,5 |
| | 31 | 18. 6.12 | 2 | 281. 4.48 : | 73. 19. 29 :: | U | 3.11,5 | 29,74 | 45,5 |
| Apr. | 13 | 4.54.47 | 1 | 95.29.52 | 30. 57. 42 | L | 0.35,0 | 29,86 | 45 |
| | 14 | 5.45.22 | 1 | 109. 9.50 | 30. 29. 40— | U | 0.35,0 | 29,69 | 34 |
| | 16 | 7.21.39½ | 1 | 135.16.22 | 33. 39. 36,5 | U | 0 39,3 | 29,72 | 37,5 |
| | 19 | 9.34.25 | 1 | 171.30.32 | 44. 7. 59,5 | U | 0.56,2 | 29,64 | 43 |
| | 20 | 10.17. 9½ | 1 | 183.12.39 | 48. 34. 10,5 | U | 1. 5,0 | 29,66 | 47 |
| | 22 | 11.44.20 | 1 | 207. 2. 7 | 57. 53. 52,5 | U | 1.30,0 | 29,63 | 52,5 |
| May | 1 | 19.48.15 | 2 | 337.13. 0 | 64. 52. 1 :: | U | 2. 6,0 | 30,23 | 42 |
| | 2 | 20.41.27½ | 2 | 351.32.27 | 60. 18. 16 | CE | 1.43,2 | 30,20 | 44 |
| | 10 | 2.43.35 | 1 | 89.13. 7 | 30. 51. 38 | CE | 0.34,0 | mean. | |
| | 11 | 3.35.44 | 1 | 103.16.42 | 30. 21. 24 | CE | 0.33,0 | mean. | |
| | 12 | 4.26.24 | 1 | 116.57.55 | 30. 46. 0,5: | U | 0.34,0 | mean. | |
| | 13 | 5.15. 7 | 1 | 130. 9.50 | 32. 28. 5,5: | U | 0.36,5 | mean. | |
| | 14 | 6. 1.44 | 1 | 142.50. 2 | 35. 3. 10 | U | 0.38,7 | 30,01 | 68 |
| | 16 | 7.29.47 | 1 | 166.52.45 | 42. 14. 54 | U | 0.51,4 | 30,30 | 62 |
| | 17 | 8.12.22 | 1 | 178.32.17 | 46. 33. 51,5 | U | 1. 0,3 | 30,32 | 58 |
| | 18 | 8.54.57½ | 1 | 190.12. 9 | 51. 9. 49 | U | 1.10,5 | 30,24 | 58 |
| | 19 | 9.38.24 | 1 | 202. 4.48 | 55. 53. 18— | U | 1.24,5 | 30,24 | 56 |
| | 23 | 12.58. 5 | 2 | 256. 4.37:: | 71.37. 9,5:: | U | 2.51,2 | 29,96 | 52 |
| | 26 | 15.52. 8 | 2 | 302.39.58 | 72. 35. 6,5 | U | 2.58,3 | 29,58 | 53,5 |
| | 28 | 17.44.59 | 2 | 332.55.53 | 66. 22. 28,5 | U | 2. 9,3 | 29,84 | 55,5 |

| Years. | Days. N.S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1758 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| June | 9 | 3. 7.19 | I | 124.44.20 | 31. 43. 35,5 | CE | mean. | | |
| | 10 | 3.55.15 | I | 137.44.23 | 33. 42. 50 : | U | 0.36,4 | 29,88 | 71,5 |
| | 13 | 6. 7.25 | I | 173.49.40 | 44. 34. 12 | U | 0.55,6 | 29,99 | 63 |
| | 14 | 6.49.29 | I | 185.21.32 | 49. 2.45,5:: | U | 1. 4,0 | 29,87 | 64 |
| | 17 | 9. 1.35 | I | 221.26. 3 | 62. 54. 30 | U | 1.53,0 | 29,97 | 48 |
| | 18 | 9.50.38 | I | 234.42.53 | 67. 1. 13 | U | 2.14,6 | 30,04 | 53 |
| | 19 | 10.43.21 | I | 248.54 45 | 70. 25. 27,5 | U | 2.36,5 | 30,06 | 63 |
| | 20 | 11.39.43½ | I | 264. 2. 0 | 72. 47. 2,5 | U | 3. 2,7 | 30,21 | 57 |
| | 22 | 13.41.55 | 2 | 296.38.15 | 73. 17. 2 | U | 3.10,0 | 29,91 | 50 |
| | 23 | 14.41.49 | 2 | 312.38.15 | 71. 14. 8 | U | 2.48,3 | 29,94 | 50 |
| | 26 | 17.26.56 | 2 | 356.59.16 | 58. 22. 5 | U | 1.33,0 | 30,05 | 53 |
| | 28 | 19. 6.40 | 2 | 23.57.39 | 47.39.48,5 : | U | 1. 2,6 | 29,91 | 53 |
| July | 16 | 8.29.46½ | I | 242. 2.33 : | 68. 52. 3,5 | U | 2.24,0 | 29,63 | 57,5 |
| | 17 | 9.23.46 | I | 256.33.50 | 71. 44. 33,5: | U | 2.48,0 | 29,61 | 58 |
| | 19 | 11.22.16 | I | 288.14.35 | 73. 44. 8 | U | 3. 9,1 | 29,54 | 58 |
| | 24 | 16.12.51 | 2 | 6. 0.53 | 54. 52. 55,2 | U | 1.21,1 | 29,63 | 49 |
| | 25 | 17. 3.38 | 2 | 19.43.53 | 49. 22. 34,5 | U | 1. 6,4 | 29,91 | 53,5 |
| | 26 | 17.53.29 | 2 | 33.12.39 | 44. 8.25 | U | 0.54,3 | 29,64 | 57 |
| | 29 | 20.24.11 | 2 | 73.56.47 | 32. 49. 43,5 | CE | 0.37,0 | mean. | |
| Aug. | 11 | 5.32.31 | I | 223.14. 4:. | 63. 29. 44 :: | U | 1.50,0 | 29,87 | 69 |
| | 12 | 6.19.41 | I | 236. 2.36 | 67. 22. 48 | U | 2.12,3 | 29,80 | 64 |
| | 17 | 11. 5.12 | I | 312.32.40 | 71. 43. 49 | L | 2.49,5 | 29,94 | 58,5 |
| | 18 | 12. 6.40 | C | 328.56.24 | 67. 50. 49 | C | 2.19,1 | 29,95 | 55 |
| | 20 | 14. 1.26 | 2 | 359.40.50 | 57. 19. 4,5 | U | 1.28,4 | 30,13 | 58 |
| | 21 | 14.54.50½ | 2 | 14. 3.22 | 51. 34. 46,5 | U | 1.10,3 | 29,76 | 60 |
| | 22 | 15.46.49 | 2 | 28. 4.19 | 45. 59. 56 | U | 0.58,6 | 29,78 | 54,5 |
| | 23 | 16.38. 6½ | 2 | 41.54.53 | 40. 55. 16,5 | U | 0.49,6 | 29,93 | 52,5 |
| Sept. | 9 | 5. 2.57 | I | 244.24.25 | 69. 38. 11 | U | 2.31,0 | 29,98 | 59 |
| | 10 | 5.54.26 | I | 258.17.53 | 72. 13. 35 : | U | 2.55,0 | 30,06 | 59 |
| | 12 | 7.47. 2 | I | 288.29.48:: | 74. 25. 6 | L | 3.21,7 | 29,98 | 56 |
| | 15 | 10.44.39 | I | 335.58.41 | 66. 2. 36 | L | 2. 8,6 | 29,97 | 52 |
| | 16 | 11.41.37 | I | 351.14.45 | 60. 50. 2,5 | L | 1.40,7 | 29,62 | 54,5 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction uſed. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1758 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Sept. | 17 | 12.39.14 | 2 | 6.40.24 | 55. 2. 13 | L | 1.20,4 | 29,66 | 55 |
| | 18 | 13.33.14 | 2 | 21.11.47 | 48. 34. 37 | U | 1. 5,0 | 29,73 | 49 |
| | 19 | 14.26.32½ | 2 | 35.32.43 | 43. 0. 47 | U | 0.53,5 | 29,77 | 49,5 |
| | 20 | 15.19.40 | 2 | 49.50.58 | 38. 8. 53,5 | U | 0.46,0 | 29,81 | 42,5 |
| | 21 | 16.12.51 | 2 | 64.10. 5 | 34. 15. 19,0 | U | 0.39,6 | 29,86 | 45 |
| | 23 | 17.58.47 | 2 | 92.41.32 | 30. 31. 27 | L | 0.35,0 | 30,05 | 40 |
| | 25 | 19.40.45 | 2 | 120.13.37 | 31. 7. 1 | L | 0.35,0 | 30,08 | 49 |
| | 26 | 20.29. 0 | 2 | 133.18.34 | 33. 1. 7 | L | 0.38,0 | 30,27 | 48,5 |
| Oct. | 9 | 5.37.53 | 1 | 282.44. 2 | 74. 45. 17,5 | L | 3.27,0 | 29,29 | 45 |
| | 10 | 6.34.48 | 1 | 297.59. 7 | 74. 1. 10 | L | 3.20,4 | 29,68 | 44 |
| | 11 | 7.32.14 | 1 | 313.22. 3 | 71. 51. 0 | L | 2.56,0 | 29,73 | 44 |
| | 12 | 8.29.14 | 1 | 328.38.41 | 67. 19. 21 | L | 2.20,0 | 29,85 | 40 |
| | 13 | 9.25. 9 | 1 | 343.38.46 | 63. 39. 4 | L | 1.58,0 | 30,08 | 44,5 |
| | 14 | 10.19.57 | 1 | 358.22.16 | 58. 9. 36,5 | L | 1.32,7 | 29,94 | 49 |
| | 15 | 11.13.58 | 1 | 12.53.51 | 52. 15. 15,5 | L | 1.15,7 | 30,31 | 47,2 |
| | 16 | 12.10. 2 | 2 | 27.56.20 | 46. 22. 16,5 | L | 1. 3,5 | 30,50 | 37 |
| | 17 | 13. 4. 4½ | 2 | 42.28.15 | 40. 24. 1,5 | U | 0.50,7 | 30,09 | 38 |
| | 19 | 14.53.37 | 2 | 71.54.13 | 32. 23. 16,5 | U | 0.37,4 | 29,96 | 40,5 |
| | 21 | 16.42.22½ | 2 | 101. 8.16 | 29. 56. 47,3 | L | 0.33,6 | 29,60 | 41 |
| | 26 | 20.40. 6 | 2 | 165.39.34 | 41. 42. 25 :: | L | 0.52,7 | 29,90 | 39 |
| Nov. | 5 | 3.33.47 | 1 | 278.14. 8 | 74. 56. 34 :: | L | 3.30,4 | 29,57 | 47,3 |
| | 8 | 6.21.41 | 1 | 323.16.48 | 69. 57. 18 | L | 2.33,4 | 29,35 | 51 |
| | 9 | 7.16. 0 | 1 | 337.53. 1 | 65. 47. 33 | L | 2. 6,0 | 29,71 | 52 |
| | 12 | 9.53.24 | 1 | 20.17.50 | 49. 16. 59,5 | L | 1. 8,2 | 30,20 | 45,5 |
| | 13 | 10.46. 5 | 1 | 34.29.24 | 43. 37. 58,2 | L | 0.56,2 | 30,20 | 44 |
| | 15 | 12.37.15 | 2 | 64.19.43 | 34. 25. 33 | L | 0.40,0 | 29,48 | 38 |
| | 16 | 13.33. 7 | 2 | 79.19.12 | 30. 58. 33 | U | 0.35,5 | 29,58 | 35 |
| | 20 | 17. 5.10½ | 2 | 136.25.22 | 33. 7. 27,5 | L | 0.38,4 | 29,66 | 38 |
| | 21 | 17.51.50 | 2 | 149. 6.16 | 36. 11. 11 | L | 0.43,8 | 29,96 | 35 |
| | 22 | 18.36. 3 | 2 | 161.10.28 | 39. 54. 31,5 | L | 0.50,4 | 30,11 | 34 |
| | 23 | 19.18.29½ | 2 | 172.48. 1 | 44. 7. 17,5 | L | 0.58,1 | 30,14 | 37 |
| | 24 | 19.59.58 | 2 | 184.10.55 | 48. 39. 49,5 | L | 1. 9,0 | 29,98 | 30,5 |
| Dec. | 7 | 6. 5.10 | 1 | 347.43.30 | 62. 35. 28 | L | 1.58,5 | 30,10 | 27 |
| | 8 | 6.56.11 | 1 | 1.30. 0 | 57. 14. 3,3 | L | 1.35,5 | 30,30 | 29,5 |
| | 13 | 11.16. 8 | 1 | 71.35.29 | 32. 43. 3,3 | L | 0.39,0 | 29,90 | 34 |

| Years. | Days, N. S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Ascension of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction used. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1758 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Dec. | 16 | 14. 3.43 | 2 | 116.33.36 | 30. 9. 16,5 | L | 0.34,0 | 29,93 | 41 |
| | 18 | 15.44. 4 | 2 | 143.41.22 | 34. 37. 4,5 | L | 0.40,0 | 29,70 | 42 |
| 1759 | | | | | | | | | |
| Jan. | 2 | 3. 7 29 | 1 | 328.48.37 | 68. 31. 37,0 | CE | 2.23,0 | 29,20 | 44 |
| | 3 | 4. 1.48 | 1 | 343.24.38 | 64. 13. 28,5 | L | 2. 0,6 | 29,50 | 40,5 |
| | 6 | 6.34. 3 | 1 | 24.32. 5 | 47. 44. 8 | L | 1. 5,0 | 29,90 | 34 |
| | 8 | 8.15.11 | 1 | 51.51.36 | 37. 44. 6 | L | 0.46,1 | 29,90 | 44,5 |
| | 12 | 11.50.34 | 1 | 109.47.39 | 29. 30. 36 | C | 0.32,5 | 29,60 | 48 |
| | 13 | 12.45.27 | 2 | 124.32.16 | 30. 28. 36 | U | 0.34,6 | 30,00 | 42,5 |
| | 14 | 13.35.35 | 2 | 138. 5.32 | 33. 19. 18,5 | L | 0.37,5 | 30,00 | 48 |
| | 16 | 15. 7.38 | 2 | 163. 8.15 | 40. 24. 49 | L | 0.50,7 | 30,20 | 44 |
| | 17 | 15.50.16 | 2 | 174.48.39 | 44. 44. 4,5 | L | 0.58,0 | 30,10 | 47 |
| | 18 | 16.31.35 | 2 | 186. 9.17 | 49. 19. 25,5 | L | 1.10,0 | 30,00 | 38 |
| | 19 | 17.12.28 | 2 | 197.23.22 | 53. 1. 24 | L | 1.20,5 | 30,10 | 33 |
| | 20 | 17.53.51 | 2 | 208.44.54 | 58. 41. 22,3 | L | 1.41,6 | 30,40 | 28 |
| | 21 | 18.36.42 | 2 | 220.28.42 | 63. 10. 4 | L | 2. 3,0 | 30,50 | 26 |
| | 22 | 19.22. 1 | 2 | 232.49.17 | 67. 16. 41 | L | 2.26,3 | 30,30 | 26 |
| | 23 | 20.10.33 | 2 | 245.58.34 | | | | | |
| Feb. | 3 | 5.21.16 | 1 | 33.53.14 | 43. 56. 22 | L | 0.56,6 | 30,10 | 45 |
| | 4 | 6.12.21 | 1 | 47.40.40 | | | | | |
| | 6 | | | | 31. 52. 43 | L | 0 37,0 | 30,10 | 44 |
| | 7 | 8.50.50½ | 1 | 90.22. 1 | 30. 5. 26,5 | L | 0.34,0 | 30,20 | 45,5 |
| | 8 | | | | 29. 5. 12 | U | 0.33,2 | 30,30 | 45 |
| | 11 | 12.16.23 | C | 145.50. 4 | 34. 59. 47 | C | 0.42,0 | 30,40 | 40 |
| Mar. | 5 | 5.52.54 | 1 | 71.23. 5 | 32. 30. 59 | L | 0.37,3 | 29,50 | 41,5 |
| | 6 | 6.47. 3 | 1 | 85.56 44 | 30. 19. 2,5 | L | 0.33,7 | 29,30 | 41 |
| | 7 | 7.40.50 | 1 | 100.24.56 | 28. 55. 45,3 | U | 0.32,8 | 29,50 | 40 |
| | 9 | 9.24. 7 | 1 | 128.16.46 | 30. 59. 39 | U | 0.33,2 | 28,60 | 45 |
| | 10 | 10.12.27 | 1 | 141.22.51 | 33. 37. 58 | U | 0.38,8 | 29,70 | 35,5 |
| | 11 | 10.58 22 | 1 | 153.52.32 | 37. 5. 6 | U | 0.44,5 | 29,50 | 36,5 |
| | 12 | 11.42. 7 | 1 | 165.49 51 | 41. 8. 49½ | U | 0.51,8 | 29,90 | 39 |
| | 13 | 12.26.15½ | 2 | 177.52 51 | 45. 37. 22 | U | 1. 0,2 | 30,10 | 42 |
| | 16 | 14.29 31 | 2 | 211.44. 5 | 60. 12. 51,5 | L | 1.42,0 | 29,60 | 38 |
| | 17 | 15 12. 7 | 2 | 223.24. 8 | 64. 34. 36,3 | L | 2. 3,8 | 29,80 | 37 |
| | 22 | 19.23.10 | 2 | 291 15 53 | | | | | |
| Apr. | 2 | 4.38.51 | 1 | 80.25.16 | 30. 44. 33 | L | 0.34,0 | 29,90 | 52,2 |
| | 3 | 5.34.35 | 1 | 95.22.45 | | | | | |
| | 4 | 6.28.55 | 1 | 109.59. 0 | | | | | |

| Years. | Days. N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction used. | Barometer. | Thermom. |
|---|---|---|---|---|---|---|---|---|---|
| 1759 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Apr. | 5 | 7.20.58 | 1 | 124. 1. 7 | 30. 7. 44,5 | U | 0.33,0 | 29,80 | 52 |
| | 7 | 8.56.53 | 1 | 150. 2.12 | 35. 45. 41 | U | 0.42,4 | 30,00 | 42 |
| | 10 | 11. 4.32 | 1 | 184.59.33 | 48. 45. 3 | U | 1. 7,5 | 29,70 | 42 |
| | 12 | 12.28.26 | 2 | 207.59.49 | 58. 18. 53,5 | U | 1.34,7 | 29,80 | 45 |
| | 13 | 13.10.42 | 2 | 219.34.33 | 62. 50. 57 | U | 1.53,4 | 29,90 | 45 |
| | 14 | 13.54.45 | 2 | 231.36.20 | 67. 28. 19,5 | L | 2.20,1 | 29,85 | 43 |
| | 15 | 14.41. 9 | 2 | 244.13.22 | 70. 59. 7,5 | L | 2.51,5 | 29,90 | 38 |
| | 17 | 16.21.56½ | 2 | 271.27.35 | 74. 47. 58 | U | 3.34,0 | 29,85 | 39 |
| | 18 | 17.15.48 | 2 | 285.56.52 | 75. 12. 23 | U | 3.44,0 | 30,20 | 34 |
| | 30 | 3.21.52 | 1 | 88.43.14 | 29. 18. 15 | CE | 0.32,0 | 29,60 | 60 |
| May | 1 | 4.18.54½ | 1 | 104. 0.21 | 28.25.11,5:: | U | 0.31,0 | 29,50 | 56 |
| | 2 | 5.13.40 | 1 | 118.43. 2 | 29. 14. 28 | U | 0.32,0 | 29,60 | 53 |
| | 3 | 6. 5.19 | 1 | 132.39. 8 | 31. 17. 32 | U | 0.34,0 | 29,70 | 55 |
| | 6 | 8.21.59 | 1 | 169.52. 8 | 42. 22. 51,5 | U | 0.51,6 | 29,70 | 54 |
| | 8 | 9.44. 6 | 1 | 192.25.37 | 51. 50. 0,5 | U | 1.13,0 | 29,90 | 57 |
| | 9 | 10.24.58 | 1 | 203.39.16 | 56. 39. 57,5 | U | 1.27,0 | 29,70 | 54 |
| | 10 | 11. 6.47 | 1 | 215. 7.34 | 61. 21. 7 | U | 1.44,0 | 29,70 | 50 |
| | 15 | 15.11.57 | 2 | 281.30.49 | 75. 24. 12 | U | 3.39,7 | 30,10 | 51 |
| | 17 | 17. 1.31 | 2 | 310.57. 6 | 73. 0. 32 | U | 3.12,5 | 30,20 | 42,5 |
| | 18 | 17.55.36 | 2 | 325.29.37 | 69. 49. 18,5 | U | 2.41,5 | 30,40 | 41 |
| June | 2 | 6.18.26 | 1 | 165.30.36 | 40. 32. 43,5 | U | 0 47,0 | 29,20 | 61,5 |
| | 4 | 7.41.38 | 1 | 188.20.14 | 49. 54. 53,5 | U | 1. 7,4 | 29,60 | 54 |
| | 6 | 9. 3.34 | 1 | 210.50.51 | 59. 33. 35,7 | U | 1.35,0 | 29,40 | 56 |
| | 7 | 9.46.22½ | 1 | 222.33.57 | 64. 5. 13,0 | U | 1.57,0 | 29,90 | 56 |
| | 8 | 10.31.30 | 1 | 234.51.46 | 68. 9. 51,0 | U | 2.22,0 | 30,10 | 55 |
| | 9 | 11.19.29 | 1 | 247.52.45 | 71. 33. 46,5 | U | 2.50,0 | 29,90 | 53 |
| | 14 | 15.52.16½ | 2 | 321.11.28 | 71. 0. 12,5 | U | 2.47,3 | 30,00 | 50 |
| | 17 | 18.27.22 | 2 | 3. 1.41 | 56. 31. 38,7 | U | 1.25,3 | 30,20 | 64 |
| July | 4 | 7.41. 5 | 1 | 217.46.14 | 62. 16. 3,5 | U | 1.46,0 | 30,40 | 65 |
| | 5 | 8.24.57 | 1 | 229.45.10 | 66. 32. 34 | U | 2. 8,0 | 30,35 | 67 |
| | 6 | 9.11.35 | 1 | 242.25.39 | 70. 14. 51,5 | U | 2.33,3 | 30,35 | 71 |
| | 7 | 10. 1.27½ | 1 | 255.55. 0 | 73. 8. 22,5 | U | 3. 0,3 | 30,00 | 68 |
| | 8 | 10.54.33 | 1 | 270.12.35 | 74. 57. 33 | U | 3.25,0 | 30,00 | 65 |
| | 9 | 11.51.19 | C | 285.25.42 | 75. 44. 2 | C | 3.34,4 | 29,90 | 66 |
| | 10 | 12.49.18½ | 2 | 300.57. 4 | 74. 31. 49 | U | 3.18,0 | 29,80 | 63 |

| Years. | Days, N.S. | Mean Time of Tranf. of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermometer. |
|---|---|---|---|---|---|---|---|---|---|
| 1759 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| July | 11 | 13.45.47 | 2 | 316. 5.36 | 72. 7. 59,3 | U | 2.54,2 | 29,96 | 59 |
| | 12 | 14.40.46 | 2 | 330.51.45 | 68. 25. 58,5 | U | 2.21,6 | 30, 10 | 60,5 |
| | 13 | 15.33.45 | 2 | 345. 7.51 | 63. 41. 19 | U | 1.55,4 | 30,20 | 58 |
| | 14 | 16.24.57 | 2 | 358.57. 3 | 58. 13. 56,2 | U | 1 32,7 | 30,05 | 56 |
| | 15 | 17.15. 3 | 2 | 12.29.52 | 51. 24. 30,5 | U | 1. 8,0 | 29,80 | 65 |
| | 17 | 18.55.54 | 2 | 39.44.54 | 41. 0. 7,5 | U | 0 49,6 | 30,10 | 61 |
| | 18 | 19.48.24 | 2 | 53.53.49 | 36. 22. 49 | C☾ | 0.41,7 | mean. | |
| | 19 | 20 42.59 | 2 | 68 33.53 | 32. 27. 8 | C☾ | 0.36,5 | mean. | |
| | 20 | 21.39.23 | 2 | 83.41.15 | | | | | |
| | 31 | 5.35.47 | 1 | 212.58.20 | 60. 28. 25,5 | U | 1.37,0 | 29,40 | 62 |
| Aug. | 1 | 6.18 22 | 1 | 224 37.52 | 72. 2. 40,5 | U | 2.52,5 | 30,00 | 61 |
| | 3 | 7.51. 6 | 1 | 240.50.58 | 64. 52. 59,5 | U | 1.58,0 | 29,70 | 65 |
| | 5 | 9.36.42½ | 1 | 278.17.44 | 75. 58. 19,5 | L | 3.40,0 | 29,90 | 63 |
| | 7 | 11.30.51 | 1 | 308 52.52 | 73. 53. 38,5 | L | 3 11,4 | 30,00 | 64 |
| | 8 | 12.30. 5 | 2 | 324.42.50 | 70. 38. 35,5 | L | 2.37,6 | 30,00 | 64 |
| | 9 | 13.25.19 | 2 | 339.32.52 | 65. 36. 33 | U | 2. 2,0 | 29,90 | 64 |
| | 10 | 14.18.40 | 2 | 353.54.27 | 60. 12. 41,5 | U | 1.37,0 | 29,90 | 62 |
| | 13 | 16.52.50 | 2 | 35.30.40 | 42. 30. 1,5 | U | 0.52,0 | 30,10 | 53 |
| | 15 | 18.38.47 | 2 | 64. 2.26 | 33. 6. 59 | U | 0 37,0 | 30,00 | 55 |
| | 17 | 20 30. 8 | 2 | 93.55.37 | 28. 43. 34 | CE | 0.32,0 | mean. | |
| | 26 | 2.50.53½ | 1 | 197.15.43 | 54.16. 4,5 | CE | 1.20,0 | mean. | |
| | 28 | 4.13.24 | 1 | 219.55. 5 | 63. 22. 15 | U | 1.51,0 | 29,80 | 65 |
| | 30 | 5.42.38 | 1 | 244.15.24 | 70. 58. 25 | U | 2.43,7 | 30,00 | 59 |
| | 31 | 6.31.28 | 1 | 257 29. 7 | 73. 38. 44 | U | 3.11,0 | 29,90 | 56 |
| Sept. | 3 | 9.14.43 | 1 | 301.21.54 | 75. 3. 18 | L | 3 26,0 | 29,70 | 61 |
| | 4 | 10.11.46 | 1 | 316.39.15 | 72. 28. 33½ | L | 3. 0,0 | 29,90 | 53 |
| | 5 | 11. 8.11 | 1 | 331.46.54 | 68. 30. 2 | L | 2.20,0 | 29,60 | 61 |
| | 6 | 12. 4.28½ | C | 346.52.46 | 63. 22. 14 | L | 1.53,0 | 29,90 | 59 |
| | 9 | 14.45.20 | 2 | 30. 9.37 | 44. 28. 36½ | U | 0.55,0 | 29,80 | 62 |
| | 10 | 15.38.53 | 2 | 44.34.10 | 38. 51. 25 | U | 0.45,5 | 29,90 | 61 |
| | 11 | 16.33.34 | 2 | 59 15.55 | 34. 8. 54 | U | 0.38,0 | 30, 10 | 54 |
| | 12 | 17.29.26 | 2 | 74.15.13 | 30. 39. 16½ | U | 0.33,0 | 29,90 | 61 |
| | 13 | 18.25.55 | 2 | 89.24. 3 | 29. 6. 36½ | L | 0.32,0 | 29, oc | 54 |
| | 15 | 20.16.35 | 2 | 119. 6.48 | 29. 21. 8 | L | 0.32,3 | mean. | |
| | 16 | 21. 8.38½ | 2 | 133. 9. 0 | 31. 13. 54 | CE | 0.34,5 | mean. | |
| | 29 | 6. 6.44½ | 1 | 279.52.15 | 76. 23. 27— | L | 3.50,0 | 29,90 | 56 |
| | 30 | 7. 1. 2 | 1 | 294.28. 0 | 75. 56. 52,5 | L | 3.44,5 | 29,90 | 54 |

| Years. | Days N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb | Refraction. | Barometer. | Thermometer. |
|---|---|---|---|---|---|---|---|---|---|
| 1759 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Oct. | 2 | 8.51.48 | 1 | 324.12.18 | 70. 48. 49 | L | 2.45,4 | 30,10 | 51 |
| | 4 | 10.40.46½ | 1 | 353.29.41 | 60. 40. 34— | L | 1.42,5 | 30,10 | 51 |
| | 5 | 11.34.27½ | 1 | 7.56.17 | 54. 26. 14 | L | 1.20,5 | 30,00 | 57 |
| | 6 | 12.30.39 | 2 | 23. 0.43 | 47. 58. 57,5 | L | 1. 4,0 | 30, 10 | 56, 5 |
| | 7 | 13.25.27½ | 2 | 37.44. 8 | 41. 15. 4,0 | L | 0.50,5 | 30, 10 | 53, 5 |
| | 8 | 14.21.40½ | 2 | 52.48.49 | 35. 51. 13,5 | U | 0.41,0 | 30,00 | 57 |
| | 12 | 18.12.17 | 2 | 114.33.54 | 28. 41. 25 + | L | 0.31,6 | 29, 20 | 50 |
| | 13 | 19. 5.46½ | 2 | 128.57.41 | 30. 28. 2+ | L | 0.33,0 | 29, 10 | 49 |
| | 14 | 19.55.55 | 2 | 142.31. 4 | 33. 22. 4,5 | L | 0.37,7 | 29,60 | 45,5 |
| | 28 | 5.46.51 | 1 | 303.28.10 | 75. 13. 37,5 | L | 0.33,0 | 29,50 | 48 |
| Nov. | 1 | 9.18 14 | 1 | 0 24. 3 | 57. 52. 3 | L | 1.37,7 | 30,30 | 38 |
| | 2 | 10.10.51 | 1 | 14.34.39 | 51. 31. 46 | L | 1.15,0 | 30,30 | 38 |
| | 3 | 11. 4 43 | 1 | 29. 3.56 | 45. 7. 11 | L | 0.59,0 | 30,20 | 40 |
| | 5 | 13. 1.14 | 2 | 60.14.44 | 33. 31. 0 | U | 0.38,0 | 30,00 | 50 |
| | 6 | 14. 1.25 | 2 | 76.19.10 | 29. 51. 12,5 | U | 0.33,0 | 29,80 | 44 |
| | 8 | 16. 1.50 | 2 | 108.28.38: | | | | | |
| | 10 | 17.51.21 | 2 | 137.54.14 | | | | | |
| | 13 | 20. 8.20 | 2 | 175.12. 0 | 44. 32. 6 | L | 0.56,0 | mean. | |
| | 14 | 20.49.25 | 2 | 186.28.59 | 49. 28. 30,5 | L | 1.11,0 | 29,80 | 35 |
| | 15 | 21.29.46 | 2 | 197.35. 4 | not observed | | | | |
| | 27 | 6.18.15½ | 1 | 340.54.40 | 65. 53. 39,5 | L | 2.10,0 | 30,00 | 45 |
| | 28 | 7. 8 24 | 1 | 354 28. 4 | 60. 33. 0,5 | L | 1.42,0 | 29,70 | 44 |
| | 29 | 7.58.32 | 1 | 8. 1.17 | 54. 36. 0,2 | L | 1.21,0 | 30,10 | 36 |
| | 30 | 8.49.36½ | 1 | 21.48.33 | 48. 21. 55,6 | L | 1. 9,0 | 30,30 | 31 |
| Dec. | 2 | 10.38.35 | 1 | 51. 6. 2 | 36. 41. 23 | L | 0.45,0 | 29,50 | 34 |
| | 3 | 11.37.34 | 1 | 66.52.12 | 31. 55. 3,5 | C | 0.37,0 | 29,70 | 37 |
| | 7 | 15.40.10 | 2 | 131.37.42 | 30. 36. 10 | L | 0.34,0 | 29,70 | 34 |
| | 8 | 16.32.27 | 2 | 145.43.15: | 33. 52. 46:: | L | 0.38,0 | mean. | |
| | 10 | 18, 5. 3 | 2 | 170.54.20 | 42. 38. 3,5 | L | 0.55,0 | 29,70 | 34 |
| | 11 | 18.47. 9 | 2 | 182.26.48 | 47. 34. 19 | L | 1. 6,0 | 29,60 | 29— |
| | 12 | 19.27.53 | 2 | 193.38.28 | 52. 37. 2 | L | 1.19,0 | 29,70 | 28 |
| | 14 | 20.49,20 | 2 | 216. 2. 0 | 62. 23. 58: | L | 1.55,0 | 29,70 | 28 |
| | 15 | 21.31.57 | 2 | 227.41.58 | 66. 34. 51 | CE | 2.10 | mean. | |
| | 23 | 3.24.36 | 1 | 323. 0.15 | | | | | |
| | 26 | 5.53 53 | 1 | 3.23. 8 | 56. 41. 54 | L | 1.28 | 29,30 | 42 |
| | 27 | 6.42.46 | 1 | 16.37.27 | 50. 42. 48,5 | L | 1.12 | 29,60 | 35 |
| | 28 | 7.32.52½ | 1 | 30.10.17 | 44. 43. 1,0 | L | 0.57 | 29,20 | 44 |
| | 31 | 10.19 32 | 1 | 74.54.26 | 30. 30. 45 | L | 0.34 | 29,10 | 42 |

| Years. | Days, N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Thermometer. |
|---|---|---|---|---|---|---|---|---|---|
| 1760 | | H. M. S. | | D. M. S. | D. M. S. | | M.S. | | |
| Jan. | 1 | 11.20.30 | 1 | 91.10.35 | 28. 23. 43,5 | L | 0.31 | 29,00 | 39 |
| | 2 | 12.24.13 | 2 | 108. 8. 4 | 27. 29. 14 | U | 0.30 | 29,30 | 34 |
| | 3 | 13.23.28 | 2 | 123.58.28: | 28. 50. 3,5 | U | 0.32 | 29,50 | 35 |
| | 8 | 17.23.28 | 2 | 189. 3.59 | 50. 35. 0 | L | 1.15 | 30,20 | 20 |
| | 22 | 3.51.49 | 1 | 359.23.46 | 58. 21. 2: | L | 1.36 | 30,05 | 38 |
| | 25 | 6.20.18 | 1 | 39.34.34 | 40. 44. 5 | L | 0.52 | 29,94 | 38 |
| | 26 | 7.13.11 | 1 | 53.49. 3 | 35. 41. 38 | L | 0.42 | 29,10 | 37 |
| | 28 | 9. 7. 9 | 1 | 84.21.35 | 28. 59. 56,5 | L | 0.32½ | 29,70 | 43 |
| | 29 | 10. 6.48 | 1 | 100.18. 1 | 27. 23. 28 | U | 0.31 | 29,50 | 33 |
| Feb. | 2 | 13.47.39 | 2 | 159.36.21 | 38. 25. 45½ | L | 0.48 | 30,20 | 35 |
| | 6 | 16.39.49 | 2 | 206.42.28 | 58. 42. 13 | L | 1.39 | 29,70 | 27 |
| | 9 | 18.49. 3 | 2 | 242. 3.43 | 71. 28. 14 | L | 2.55 | 30,00 | 41 |
| | 20 | 3.26. 2 | 1 | 21.30.57 | | | | | |
| | 22 | 5. 9.36 | 1 | 49.27. 9 | 36. 53. 15 | L | 0.45 | 30,20 | 33 |
| | 24 | 7. 1.16½ | 1 | 79.25. 2 | 29. 27. 51 | L | 0.33 | 29,60 | 42 |
| | 25 | 7.59.30 | 1 | 95. 0. 2 | 27. 23. 9 | U | 0.30 | 29,70 | 38 |
| | 27 | 9.54.30 | 1 | 125.41. 9 | 29. 6. 1 | U | 0.32½ | 29,50 | 39 |
| | 28 | 10.47.33 | 1 | 140. 5. 4 | 32. 33. 37 | U | 0.38 | 30,10 | 36 |
| | 29 | 11.37.40 | 1 | 153.37.53 | 36. 2. 50 | U | 0.43 | 30,30 | 34 |
| Mar. | 1 | 12.26.40 | 2 | 166.54. 7 | 40. 44. 46½ | U | 0.53 | 30,30 | 30 |
| | 4 | 14.34.42½ | 2 | 201.57.27 | 56. 49. 14½ | L | 1.33 | 30,00 | 31 |
| | 7 | 16.42.25 | 2 | 236.55.40 | 70. 17. 42 | L | 2.47 | 30,40 | 35 |
| | 10 | 19. 8.10 | 2 | 276.25.22 | | | | | |
| | 21 | 3.57.56 | 1 | 59. 5. 3 | 33. 37. 40 : | L | 0.38 | 29,60 | 48 |
| | 22 | 4.55.40 | 1 | 74.32.34 | 30. 0. 39 | L | 0.33 | 29,70 | 48 |
| | 27 | 9.34. 9 | 1 | 149.16.52 | 34. 30. 36 | U | 0.41 | 30,10 | 35 |
| | 28 | 10.21.12 | 1 | 162. 3.48 | 38. 58. 50 | U | 0.49 | 30,30 | 36 |
| | 29 | 11. 5.34 | 1 | 174.10. 6 | 43. 57. 37 | U | 0.58 | 30,20 | 36 |
| | 30 | 11.48. 1½ | 1 | 185.47.56 | 49. 11. 43 | U | 1. 9 | 30,00 | 37 |
| | 31 | 12.31.30 | 2 | 197.40.57 | 54. 28. 21 | U | 1.23 | 29,90 | 41 |
| Apr. | 2 | 13.54.41 | 2 | 220.30.24 | 64. 50. 52 | L | 2. 9 | 30,10 | 31 |
| | 3 | 14.37.57½ | 2 | 232.20.28 | 69. 5. 35 | L | 2.35 | 30,20 | 34 |
| | 4 | 15.23. 8½ | 2 | 244.39.13 | 72. 38. 28 | L | 3. 9 | 30,20 | 42 |
| | 7 | 17.51.30 | 2 | 284.48. 8: | | | | | |
| | 20 | 4.45.22 | 1 | 100.32.39 | 26. 44. 34,5: | U | 0.28 | 29,60 | 65 |
| | 22 | 6.40.22 | 1 | 131.20.32 | 29. 40. 46 | U | 0.33 | 30,00 | 55 |

| Years. | Days, N. S. | Mean Time of Tranſit of ☽'s Limb. | ☽'s Limb. | Right Aſc. of ☽'s Limb. | Obſerved Zenith Diſtance. | ☽'s Limb. | Refraction. | Barometer. | Thermometer. |
|---|---|---|---|---|---|---|---|---|---|
| 1760 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Apr. | 24 | 8.20. 3 | 1 | 158.18.16 : | 37. 23. 30,5 | U | 0. 44½ | 29,80 | 46 |
| | 25 | 9. 4.49 | 1 | 170.30.38 | 42. 14. 47 | U | 0. 52 | 29,90 | 44 |
| | 26 | 9.47.19 | 1 | 182. 9. 4 | 47. 25. 5 | U | 1. 3 | 29,90 | 44 |
| | 27 | 10.28.31 | 1 | 193.27.56 | 52. 41. 42,5 | U | 1. 16½ | 30,00 | 40 |
| | 29 | 11.50.45½ | 1 | 216. 3.14 | 62. 48. 45 | U | 1. 54 | 29,80 | 39 |
| | 30 | 12.35.29½ | 2 | 228.15.12 | 67. 17. 39,5 | U | 2. 19 | 29,80 | 40 |
| May | 10 | 20.50. 7½ | 2 | 2. 6.24 | | | | | |
| | 11 | 21.40.36 | 2 | 15.44.42 | | | | | |
| | 23 | 7.46.44½ | 1 | 178.32.15 | 45. 38. 59,5 | U | 0. 58½ | 29,70 | 54 |
| | 24 | 8.28.15 | 1 | 189.55.44 | 50. 56. 10,5 | U | 1. 10 | 29,70 | 54 |
| | 25 | 9. 8.58½ | 1 | 201. 7.27 | 56. 10. 36 :: | U | 1. 25 | 29,50 | 55 |
| | 27 | 10.31.52½ | 1 | 223.52.36 | 65. 51. 57 | U | 2. 6 | 29,50 | 53 |
| | 28 | 11.15.37 | 1 | 235.49.40 | 69. 57. 19 | U | 2. 35 | 29,80 | 51 |
| | 31 | 13.42.23 | 2 | 275.34.31 | 76. 56. 8 | U | 4. 0 | 29,90 | 61 |
| June | 2 | 15.25.26½ | 2 | 303.22.58 | 75. 39. 48 | U | 3. 35 | 29,80 | 62 |
| | 3 | 16.16.21 | 2 | 317. 7.49 | 73. 7. 11,5 | U | 3. 4,0 | 29,90 | 61 |
| | 18 | 4.57.49½ | 1 | 161.49.12 | 38. 33. 33 | U | 0. 44 | 29,50 | 63 |
| | 19 | 5.43.19½ | 1 | 174.12.43 | 43. 42. 22 | U | 0. 53 | 29,50 | 61 |
| | 21 | 7. 7.26 | 1 | 197.16. 6 | 54. 22. 50 | U | 1. 18 | 29,70 | 59 |
| | 22 | 7.48.22 | 1 | 208.30.47 | 59. 31. 39 | U | 1. 35 | 29,50 | 57 |
| | 23 | 8.29.55 | 1 | 219.54.59 | 64. 20. 0 | U | 1. 54 | 28,92 | 56 |
| | 25 | 9.58. 9 | 1 | 244. 0.26 | 72. 14. 55 | U | 2. 56 | 29,50 | 54 |
| | 28 | 12.29.34 | 2 | 284.55.18 | 77. 34. 2 | L | 4. 13 | 29,70 | 53 |
| | 29 | 13.21.42 | 2 | 298.58.32 | 76. 41. 23 | L | 3. 54 | 30,00 | 61 |
| | 30 | 14.13.19 | 2 | 312.54. 7 | 74. 0. 11 | U | 3. 15 | 30,10 | 60 |
| July | 7 | 19.56. 3 | 2 | 45.43.10 | 37. 42. 0 | CE | 0. 45 | mean. | |
| | 15 | 2.47.24 | 1 | 155.44.12 | | | | | |
| | 17 | 4.20.33½ | 1 | 181. 3.42 | | | | | |
| | 18 | 5. 3.12½ | 1 | 192.44.20 | 52. 22. 58: | U | 1. 10 | 30,00 | 77 |
| | 19 | 5.44.47½ | 1 | 204. 8.55 | 57. 41. 47: | U | 1. 26 | 30,00 | 66 |
| | 21 | 7. 8.59 | 1 | 227.13.32 | | | | | |
| | 22 | 7.53.23 | 1 | 239.20.34 | 71. 5. 11,5 | U | 2. 41 | 30,00 | 66 |
| | 23 | 8.40. 6 | 1 | 252. 2.13 | 74. 8. 52 | U | 3. 21 | 30,10 | 52 |
| | 24 | 9.29.17 | 1 | 265.21. 9 | 76. 12. 21,5 | U | 3. 48 | 30,10 | 55 |
| | 27 | 12. 6.39 | C | 307.45.37 | 75. 7. 59 | C | 3. 32 | 30,00 | 55 |
| | 28 | 12.59.21½ | 2 | 321.57.30:: | | | | | |
| | 29 | 13.49.21 | 2 | 335.28.33 | 67. 30. 11,5 | U | 2. 17 | 30,00 | 59 |

| Years. | Days, N.S. | Mean Time of Transit of ☽'s Limb. | ☽'s Limb. | Right Asc. of ☽'s Limb. | Observed Zenith Distance. | ☽'s Limb. | Refraction. | Barometer. | Thermometer. |
|---|---|---|---|---|---|---|---|---|---|
| 1760 | | H. M. S. | | D. M. S. | D. M. S. | | M. S. | | |
| Aug. | 3 | 17.50.57 | 2 | 40.58.11 | 39. 3.27 | U | 0.45 | 29,70 | 59 |
| | 4 | 18.44.12½ | 2 | 55.18.23 | 33.57.18 | U | 0.37 | 29,40 | 61 |
| | 19 | 6.32.13 | 1 | 246.35.35 | 73.13.45: | U | 3. 0 | 29,70 | 66 |
| | 21 | 8.11.36 | 1 | 273.28.40 | 77.31.40½ | L | 4. 2 | 29,60 | 66 |
| | 22 | 9.56.14 | 1 | 301.40.47 | 77.36.45 | L | 4. 5 | 29,60 | 62 |
| | 23 | | | | 76.21.14,5 | L | 3.46,0 | 29,80 | 61 |
| | 27 | 13.20.47½ | 2 | 356.53.59 | 58.52. 2: | U | 1.35,4 | 30,10 | 51 |
| | 28 | 14. 9. 4 | 2 | 9.59.10 | 52.45.29 | U | 1.15,6 | 30,00 | 51 |
| | 29 | 14.57.46 | 2 | 23.10.46 | 46.31.29 | U | 1. 0,5 | 29,90 | 51 |
| | 31 | 16.40.25 | 2 | 50.53.10 | 35. 8.46 | U | 0.40,5 | 30,00 | 51 |
| Sept. | 1 | 17.35.54 | 2 | 65.46.48 | 30.46. 9 | U | 0.34,6 | 30,20 | 49 |
| | 13 | | 1 | 217.28.26 | 64.12.12 | CE | 1.56,0 | 29,90 | 67 |
| | 15 | | | 241.38.44 | not observed | | | | |
| | 17 | 6. 2.30½ | | 267.43.41 | 76.51.50 | U | 3.47,6 | 29,50 | 71 |
| | 20 | 8.37.18– | | 309.29.14 | 75.14.54: | L | 3.31,2 | 29,70 | 56 |
| | 22 | 10.39.18 | 1 | 337. 1.47 | 67.27.24 | L | 2.13,3 | 29,20 | 54 |
| | 27 | 14.34. 1 | 2 | 45.48.39: | 36.43.48 | U | 0.41,3 | 29,40 | 58 |
| | 29 | 16.28.40 | 2 | 76.31.26 | 28.15.58 | U | 0.30,3 | 29,60 | 54 |
| Oct. | 1 | 18.29.30 | 2 | 108.47. 5 | 26.49.26 | L | 0.28,8 | 30,00 | 55 |
| | 3 | 20.23. 4 | 2 | 139.13.34: | 31.31.46 | L | 0.35,2 | 30,10 | 54 |
| | 18 | 7.17.36½ | 1 | 317. 6.31 | 73.47.17 | L | 3.13,2 | 30,00 | 57 |
| | 20 | 8.56.33 | 1 | 343.52.56 | 64.56. 0 | L | 2. 3,5 | 29,70 | 44 |
| | 22 | | 1 | 10.24.39:: | 52.47.42 | L | 1.13,0 | 28,80 | 46 |
| | 24 | 12.20.39½ | 2 | 38.59.36 | 39.52.59 | L | 0.48,3 | 29,10 | 37 |
| | 25 | 13.17. 7 | 2 | 54. 7.49 | 33.42.45 | U | 0.39,1 | 29,40 | 36 |
| Nov. | 2 | 20.46. 1 | 2 | 174.32.59 | 44.19.34: | L | 0.56,2 | 29,40 | 43 |

# ASTRONOMICAL PROBLEMS

BY THE LATE

MR. LYONS.

# ASTRONOMICAL PROBLEMS

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## MR. LYONS.

1. IN finding the Longitude at Sea by Means of the Moon's Diſtance from the Sun or a fixed Star, it is neceſſary to have the Altitudes of the Moon and Sun or Star; which, if the Horizon is too hazy to obſerve by Day, or, if the Obſervation is made at Night, when the Altitude of a Star is very difficult to obſerve, may be computed very eaſily by the following Rule.

### To find the Altitude of the Sun at any Time.

By the Rules in the Nautical Almanac for 1771, find the Logarithm Ratio, ſubſtract it from the the Riſing found anſwering to the given Diſtance of Time from Noon in the Tables in the ſame Almanac, the Remainder is the Logarithm of a Number, which ſubtracted from the natural Sine of the Sun's Meridian Altitude, leaves the natural Sine of the Altitude at the required Time.

EXAMPLE.

What is the Sun's Altitude at $11^h$. 0′ A. M. the Latitude of the Place being 60°. 0′, the Sun's Declination 0°. 0′, and conſequently its Meridian Altitude 30°. 0′?

| | | |
|---|---|---|
| Time from Noon — | $1^h$. 0′ Riſing — | 3.53243 |
| | Log. Ratio — | 0.30103 |
| | | 3.23140 |

Which is the Log. of 1704
this ſubtracted from 50000, the natural Sine of 30°. 0′

leaves - - - 48296, the natural Sine 28° 53′, the Sun's Altitude at $11^h$.

### 2. To find the Altitude of the Moon or a Star at any Time.

To the apparent Time add the Sun's right Aſcenſion for that Time, the Sum is the right Aſcenſion of Mid-heaven.

The Difference between this, and the right Aſcenſion of the Star is the horary Angle or Diſtance of Time from the Star's paſſing the Meridian.

From the Tables in the Nautical Almanac for 1771, take out the Riſing for this Time, and to it add the Log. Coſine of the Star's Declination, and the Log. Coſine of the Latitude of the Place, the Sum, abating 20 from the Index, is the Logarithm of a Number, which ſubtracted from the natural Sine of the Star's Meridian Altitude, leaves the natural Sine of the Altitude at the given Time.

EXAMPLE.

To find the Altitude of Andromedæ *December* 1ſt, 1774, at $10^h$ P. M. at *London*, Lat. 51°. 31′ N.

| | | | | | |
|---|---|---|---|---|---|
| Right Aſcenſion of Andromedæ — | | | $23^h$. 56′. 48″ | | |
| Declination — — | | | 27° 41′ N. | | |
| Meridian Altitude — — | | | 66. 10 | | |
| Apparent Time - - | $10^h$. | 0′. | 0″ | | |
| Sun's right Aſcen. - | 16 | 32 | 59 | | |
| Right Aſc. of Mid heaven | 2 | 32 | 59 | Coſ. Lat. | 9.79399 |
| Star's Right Aſcenſion - | 23 | 56 | 48 | Coſ. Decl. | 9.94720 |
| Horary Angle - - | 2. | 36. | 11 | Riſing - | 4.34900 |
| The Sum is the Log. of —— | | | | 12308 - | 4.09019 |
| Subtracted from nat. Sine | 66. | 10 | — | 91472 | |
| leaves — — — | | | | 79164 Nat. Sine | 52. 20. the Alt. |

The Altitude that comes out by this Calculation is the true One; and therefore to find the apparent Altitude, it muſt be corrected by adding the Refraction, and if it is the Moon, ſubtracting the Parallax correſponding to that Altitude.

## II. Having the Time the Sun's Diameter takes up to paſs a horizontal Line, to find the Latitude of the Place of Obſervation.

From the proportional Logarithm of the obſerved Time, the Index being increaſed by 10, ſubtract the proportional Logarithm of the Time the Sun's Diameter takes up to paſs the Meridian, found by doubling the Time of the Semi-diameter ſet down in the Nautical Almanac, the Remainder is the Log. Sine of the Angle of Poſition.

To

To the Log. Cofine of this Angle add the Log. Cofine of the Sun's Declination, the Sum, rejecting 10 from the Index, is the Log. Sine of the Latitude; exactly, if the Obfervation was made of the Sun's rifing through the Horizon, otherwife only nearly to be corrected as follows.

Add together the Log. Sine of the Altitude, the Log. Sine of the Declination, and the Log. Secant of the Latitude, the Sum, rejecting 20 from the Index, is the Log. Sine of the firft Correction, to be added, if the Latitude and Declination are both of the fame Name, otherwife fubtracted.

Add together the the Log. Tangent of the Latitude, and the Log. verfed Sine of the Altitude, the Sum rejecting 10 from the Index, is the Log. Sine of the Second Correction to be always fubtracted.

## EXAMPLE I.

Suppofe *December* 21, 1774, the Time of the Sun's Diameter rifing through the Horizon of the Sea was obferved to be 7′. 20″. to find the Latitude of the Ship.

| | | |
|---|---|---|
| Obferved Time 7 20″ Propl. Log. | — | 11.3899 |
| Time of the Sun's Diam. paffing Mer. 2′ 22″ 2 | | 1.8804 |
| Angle of Pofition 18°. 51′½ Sine | — — | 9.5095 |
| Cofine Angle of Pofition | — 9.97608 | |
| Cofine Declination 23. 28 | — 9.96251 | |
| Latitude - - 60 15 Sine | 9.93859 | |

## EXAMPLE II.

Suppofe the fame Day, the Diameter of the Sun was obferved to take 5′. 18″ in paffing an horizontal Wire, whofe Altitude was 5°. 0′ to find the Latitude.

| | | |
|---|---|---|
| Obferved Time 5′. 18″ Propor. Log. - - | | 11.5310 |
| Time of Sun's Diameter paffing Mer. - - | | 1.8804 |
| Angle of Pofition 26°. 34′ Sine - - | | 9.6506 |
| Cofine Angle of Pofition - | 9.95154 | |
| Cofine Declination - - - | 9.96251 | |
| Approximate Lat. 55°. 7′. 50″ Sine | 9.91405 | |
| Sine Alt. — 8.9403 | V. S. Alt. — | 7.5804 |
| Sine Decl. — 9.6001 | Tang. Lat. — | 10.1569 |
| Sec. Lat. — 10.2428 | 2d Cor. 18′. 50″ | 7.7373 |
| 1ft Cor. 3°. 28′. 50″ Sine 8.7832 | | |

Approx.

| | | |
|---|---|---|
| Approx. Lat. | — | 55°. 7'. 50'' |
| 1ſt Cor. | — | 3 28 50 |
| | | 51 39 0 |
| 2d Cor. | — | — 18 50 |
| Latitude | — | 51 20 10 |

## III. Having the Time the Sun's Diameter takes up to paſs a Vertical Line, to find the Latitude.

From the proportial Logarithm of the obſerved Time, the Index being increaſed by 10, ſubtract the proportional Log. of the Time the Sun's Diameter takes up to paſs the Meridian, the Remainder is the Log. Coſine of the Angle of Poſition, whence the Latitude may be found as before.

EXAMPLE.

Suppoſe *December* 21, 1774. The Sun being 5° high, it took up 2'. 39'' to paſs a Vertical Hair in a Teleſcope, to find the Latitude.

| | | |
|---|---|---|
| Obſerved Time 2' 39'' Propl. Log. | — | 11.8320 |
| Time of Sun's Diameter paſſing Mer. | — | 1.8804 |
| Angle of Poſition 26. 33 Coſine | — | 9.9516 |
| Coſine Declination —— | — | 9.9625 |
| Approx. Lat. 55. 8 Sine | — | 9.9141 |

Whence the true Latitude will be found the ſame as in the laſt Example.

## Remarks on the Method of finding the Latitude from Two Altitudes with the Time between them.

IV. If the Sun comes very near the Zenith, the Sine of the Altitude will vary ſo little as to make it dubious which arc ought to be taken as belonging to the natural Sine of the Meridian Altitude.

In this Caſe it will be much eaſier and more convenient to uſe the following Rule.

Having found the Time from Noon, find the Logarithm anſwering to it in the Column of Riſing (Nautical Almanac 1771) and to this Log. add the Secant leſs Radius of the half Sum

Sum of the greateſt obſerved Altitude, and the Meridian Altitude which the Sun ought to have, ſuppoſing the Latitude by Account right, and the arithmetical Complement of the Log. Ratio, the Index being diminiſhed by 5, the Sum is the Sine of an Angle, which added to the greateſt Altitude will give the Sun's Meridian Altitude.

## EXAMPLE.

Suppoſe *December* 21, 1774, when the Sun's Declination is 23°. 28′ S. and the Latitude by Account 22°. 40′ S. the following Altitudes were taken.

| Times by Watch. | Altitude of the Sun's Center. | Nat. Sines. | The Merid. Alt. ought to be 89. 12 to the South of the Zenith. | |
|---|---|---|---|---|
| 11h. 57′ 0″ | 89°. 10′ | 99989.42 | Lat. 22. 40 | 0.03491 |
| 12 4 40 | 88 50 | 99979.27 | Decl. 23 28 | 0.03749 |
| | | | Log. Ratio | 0.07240 |
| 7 40 Elapſed Time | | 10.15 | Its Log. | 1.00647 |
| 3 50 ½ Elapſed Time | | | | 1.77663 |
| 0 50 Middle time | | | | 2.85550 |
| 3 0 Time from Noon. Riſing | | | | 0.93284 |
| Mean of { 89. 12 Mer. Alt. / 89. 10 Gr. Alt. } | | 89. 11 Sec.-Rad. | | 1.84609 |
| Arith. Compl. of Log. Ratio—5 | | | | 4.92760 |
| The Sum is the Sine of 0°. 17′ | | | | 7.70653 |
| Which added to | | 89 10 | the greateſt obſerved Alt. | |
| Gives | | 89 27 | Mer. Alt. | |
| Co. Decl. | | 66 32 | | |
| | | 22 55 | Latitude. | |

This differing much from the aſſumed Latitude, the Work muſt be repeated with this new Latitude 22°. 55′ 0.03571

Decl. - 23 28 0.03749

Log. Ratio — 0.07320

Log.

Log. of Diff. of natural Sines — 1.00647
3 50 ½ elapſed Time —— — 1.77663

0 50 Middle Time ——— 2.85630

3 0
Time from Noon the ſame as before, Riſing — 0.93284

Mean of { 89 27 Mer. / 89 10 Gr. } Alt. 89 18½ S.—R. 1.91827
Ar. Co. Log. Ratio 4.92680

0°. 21′ Change Sine — 7.77791
This added to 89 10

gives the Mer. Alt. 89 31 and Lat. 22°. 59′

If the Work is repeated with this new Latitude, only the latter Part need be altered.

Lat. 22 59 — 0.03592
Decl. 23 28 — 0.03749

Log. Ratio — 0.07341

Its Complt. — 4.92659

Mean of { 89 31 Mer. / 89 10 Gr. } Alt. 89 20½ Sec.-Rad. 1.93972
Riſing 0.93284

0°. 22′ Change Sine 7.79915
89 10

Therefore the Mer. Alt. 89 32 and the Lat. 23°. 0′ S.

In this laſt Operation only the Secant of the Mean or half Sum of the Meridian and greateſt Altitudes need have been changed, the reſt remaining as in the preceding Operation; thus,

Riſing —— 0.93284 } as before.
C. Ar. Log. Ratio 4.92680 }
Sec. of Mean Alt. 1.93972

Sum 7.79936 the Sine of 0°. 22′

The ſame as before.

V. When

V. When One Altitude of the Sun is taken at ſome Diſtance from Noon, and another very near it, if the Sun comes near the Zenith, the Latitude cannot eaſily be deduced by the Method laid down in the Nautical Almanac for 1771, as the Latitudes concluded from it, will converge but ſlowly to the true one; but it may be readily found by the following Method.

By means of the ſuppoſed Latitude, Sun's Declination and Altitude taken at ſome Diſtance from Noon, find the apparent Time, and conſequently how much the Watch is too faſt or ſlow for apparent Time, and thence what was the apparent Time and Diſtance from Noon when the higheſt Altitude was taken, from whence by the preceding Rule, the Change in Altitude may be found, and the Meridian Altitude and Latitude.

## EXAMPLE.

Suppoſe *December* 1, 1774, Sun's Decl. 23°. 28′. 8 Latitude by Account 22°. 40′. S. the Sun's Altitude at $9^h$. 10′. 0″ by the Watch was 48°. 50′, and at $12^h$. 7′. 0″, it was 89°. 10′ to to find the Latitude.

| | | | |
|---|---|---|---|
| Co. Lat — | 67 20 | — Sec.—Rad. | 0.03491 |
| Co. Decl.— | 66 32 | ——— | 0.03749 |
| Zen. Diſt. | 41 10 | Log. Ratio | 0.07240 |
| Half Sum | 87 31 | Sine — | 9.99959 |
| Diff. of ½ Sum & Z. D. | 46 21 | Sine — | 9.85948 |
| | | | 2). 19.93147 |
| | 22 27 50 | — Cof. | 9.96573 |
| | × 2 | | |
| | 44 55 40 | horary Angle, which turned into | |
| Time is | 2 59 43. | the Diſtance from Noon, and the | |
| App. Time | 9 0 17 | | |
| by the Watch | 9 10 0 | | |
| Watch too faſt | 9. 43 | | |
| Time of the Second Obſervation by the Watch — — | | 12 7 0 | |
| | | — 9. 43 | |
| Apparent Time — — | | 11 57 17 | |



Diſtance

Diſtance from Noon — 0 2 43 Riſing 1.92632

Mean of { 89 12 Mer. / 89 10 Greateſt } Alt. 89 11 S.—R. 1.84609

Arithm. Comp. Log. Ratio —— 4.92760

Change in Altitude 0°. 17′ — Sine 7.70001

Which added to — 89 10

Gives the Mer. Alt. 89 27

Co. Decl. 66 32

Latitude - 22 55

If we repeat the Work with this new Latitude, it will ſtand thus;

Co. Lat. — 67°. 5′ —— 0.03571

Co. Decl. — 66 32 —— 0.03749

Zen. Diſt. — 41 10 Log. Ratio 0.07320

Half Sum — 87 23½ Sine — 9.99955

Diff. of ½ S & Z. D. 46 13½ Sine — 9.85857

2) 19.93132

22 29 10 Coſine —— 9.96566

× 2

44 58 20 Which turned into Time is 2 59 53 from Noon

Apparent Time — 9 0 7

by the Watch — 9 10 0

Watch too faſt — 0 9 53

Apparent Time of Second Obſervation 11ʰ. 57′. 7″

Diſtance from Noon — 0 2 53 Riſing 0.89808

Mean of { 89 27 / 89 10 } 89 18½ Sec.—Rad — 1.91827

Ar. Co. Log. Rat. — 4.92680

Change — 0°. 19′ Sine 7.74315

Meridian Alt. 89 29 & Lat. 22°. 57′

If

If we had performed this laſt Work by natural Sines as in the Rules, in the Nautical Almanac of 1771, it would ſtand thus;

| | | | |
|---|---|---|---|
| Diſtance from Noon | 2′. 35″ | Riſing | 0.89808 |
| | | Log. Ratio | 0.07320 |
| | | | 0.82488 |
| Which is the Log. of thus added to | —— | 7 99989 | the Nat. Sine of 89 10 |
| Gives | —— | 99996 | the natural Sine of the Meridian Altitude, which anſwers to any Arc between 89° 26′. and 89°. 31′. |

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